American Druggist and Pharmaceutical Record.

A JOURNAL OF PRACTICAL PHARMACY.

VOL. XXII. No. 19. NEW YORK, JUNE 22, 1893. WHOLE No. 252

AMERICAN DRUGGIST PUBLISHING COMPANY.

37 COLLEGE PLACE, NEW YORK.

A. R. ELLIOTT, PRESIDENT.

Subscription Price—For the United States and Canada, - $2.00

If paid in advance direct to this office, 1.50

" " for Foreign Countries, - - - 2.50

Single Copies, - - - - - - - - - .15

The "American Druggist and Pharmaceutical Record" is issued on Thursday of each week. Changes of advertisements and all copy for publication should be received before Tuesday of each week.

We are not responsible for any money paid to agents. All remittances should be made direct to this office. Express Orders, Post-Office Orders and Drafts on New York should be made payable to the "American Druggist Publishing Company" and addressed to them at 37 College Place, New York.

Liberal Commissions to Club Agents.

FOR A UNIFORM SCALE OF PRICES.

THE committee to whom the contributions in Prize Competition No. 21 were referred have awarded the prize to GEO. CUTTS, New York City, for the article on "A uniform price-scale for prescriptions" which we print elsewhere in this issue.

The suggestions embodied in MR. CUTTS' paper have the merit of being practical and are such as may be easily carried into effect by all druggists; and when the anxiety with which the different pharmaceutical associations offer queries for solution is brought to mind, it must appear strange that a subject of this important character has not hitherto been taken up for discussion. Every pharmacist is or should be interested in the maintenance of rates and were an interstate scale established it would go a long way toward promoting uniformity in prices and establishing better relations among the druggists of the whole country. Although it is highly probable that substitution, cutting, the relation of the pharmacist to the physician, pharmacy laws and the hundred and one other things so cherished of our association debaters will form the themes of much learned discussion at the forthcoming meeting of the A. P. A., it is not unlikely that a sufficient number of practical individuals will be found to urge the adoption of a uniform scale of prices which might be similar in its scope to that proposed in these pages.

While on the subject of association meetings and proposed subjects for discussion before gatherings of pharmacists, the suggestions of a prominent and widely known member of the profession in Chicago will be opportune. In a letter received recently he says:

Why would it not be a good plan for some of the coming pharmaceutical conventions, especially that of the A. P. A., to discuss and prepare a model pharmacy law?

One law would do in all the several States. The writer has talked with all sorts of people: Men who have held positions on pharmacy boards, men who would like to be on boards—and all agree apparently that existing laws are far from models. Some advanced objections for different reasons and from different motives. Some object—because they wish to push themselves into prominence and be elevated to some board, others object because they failed to reach that goal; but not *one* leading, sensible, intelligent pharmacist seems to be enthusiastic over any law. The A. P. A. has some brilliant talent, orators, thinkers, etc., might they not employ themselves to much advantage in discussing "The Model Pharmacy Law" at Chicago?

There appears to be a unanimous disposition on the part of pharmacists to favor a national board; but, as ETHELWOLF FOWLER has pointed out in an article contributed recently to this journal, this will for a long time be difficult to accomplish, on account of the peculiar relations between State and national governments.

PHARMACY IN CHICAGO.

OUR remarks on "Chicago Methods" in the issue of May 25 has caused a flutter among many of the craft in that city, and we have received letters both in praise and condemnation of the views advanced. This was of course to be expected and is proof presumptive of the general accuracy of our observations.

ALBERT E. EBERT, of Chicago, who was asked for an expression of opinion as to the irregularities referred to in the editorial, has the following to say:

I have read the editorials and they cover many points that should be near and dear to the pharmacist who has pharmacy as a profession at heart.

However, we are all of us but a makeup of *human nature*, and the effort pure and simple, of this nature, seems to be how to catch the nimble nickel. "The Almighty Dollar" is a thing of the past and is out of the question to the retail druggists.

Dr. Eccles has allotted to me a query that covers pretty much the ground of your editorials, and as I have said yes I must refrain from giving my views until the meeting of the A. P. A.

You are making a live publication of the AMERICAN DRUGGIST AND PHARMACEUTICAL RECORD and it cannot be anything but a success.

While this tacitly admits the existence of irregularities it is still rather apologetic in tone and lacks something that agressiveness of spirit for which MR. EBERT was once so noted.

WM. BODEMANN, who is a widely known and successful Chicago pharmacist, says with reference to "Chicago Methods":

I was very much pleased with your editorial on pharmacy legislation in Illinois and the present status of the liquor question in Chicago. That the authorities here do not do their duty is all too evident. The liquor registers, should be inspected more frequently and the illegitimate traffickers put down. My views may not coincide with those held by other members of the craft, but I am in favor of requiring every pharmacist who follows saloon methods, to take out a regular saloon license and fly his true colors. His license to practice pharmacy should then be revoked and the evolution would be complete.

As to pharmacy legislation, my platform is short and straight. I am in favor of a law to regulate the practice of pharmacy, but it must be so constructed as to accomplish its intention, rather, however, no law at all, than anything approaching to our present Frisbee-fizzle. The weaknesses of the Frisbee measure have been so often exposed that it would be a work of supererogation to further refer to them. The whole thing is a farce and afraud and should be abolished.

It is curious in view of the widespread dissatisfaction that prevails in Illinois with respect to its pharmacy laws, that agitation for a complete revision is not more general. Only a few of the more conscientious and reputable pharmacists appear to be at all interested in the subject and they seem inclined to leave the burden of protest to one or two individuals.

THE SALE OF LIQUOR BY PHARMACISTS.

IN our news column we give in full the decision rendered in the test case which was tried not long since in Kentucky with a view of determining the constitutionality of the restrictions imposed by a statute enacted at the last session of the Kentucky legislature.

The pharmacists of Louisville naturally resented as unfair and uncalled for both the legislative enactment and the city ordinance, both of which practically classed the pharmacist with the saloon keeper. The following excerpts, from a circular issued by a committee of Louisville pharmacists indicates the stand taken in the matter:

We believe that a licensed pharmacist has the right to sell and dispense for medicinal purposes any article recognized as a medicine by the "United States Pharmacopœia."

We believe that a great majority if not all reputable pharmacists are anxious to have the profession of pharmacy legally distinguished from that of the retail liquor dealer.

We believe that if the question of our liability for special license for selling liquors for medicinal purposes strictly should be properly brought before the courts for determination, that our position would be maintained.

While this committee admit that the police power of the State is great and ought to be, they claim that the rights of man are greater. That the State cannot enter into a man's home and dictate to him what he shall or shall not eat or drink, nor can it enter the domain of medicine and say what shall or shall not be used in the treatment of disease.

J. PROCTOR KNOTT, ex-governor of Kentucky, who represented DR. FOWLER and his colleagues, argued that any law which prohibits a man from purchasing liquors as a medicine is unconstitutional. That the right to seek health and happiness are God given rights, guaranteed in the bill of rights of the Constitution and that a man, as a man has a right to determine of his own free will, without even the intervention of a physician, that he needs liquor as a medicine and that a pharmacist as a purveyor of medicine has clearly a right to sell it to him, as he would any other official drug or preparation.

It is held, therefore, by the committee that any law whether national, State or municipal which taxes or prohibits pharmacists from selling liquors for medicinal purposes is unconstitutional.

This is simply another phase of the struggle which has been going on since the promulgation of the Constitution of the United States between those who desire to centralize and strengthen the government and those who are more jealous of the individual rights and who stand firmly on the proposition that absolutely no powers were conferred by the Constitution aside from what was specifically stated therein.

The ultimate decision will be awaited with the greatest interest, for, if favorable, it will be the signal for a similar legal battle in many of the States.

A GREAT DICTIONARY.

THE enormous quantity of literature regularly called for by the public creates a demand for great works of reference. Text-books, manuals, histories, and even works of fiction contain many terms that require explanation, and, therefore, cyclopedias, dictionaries, and encyclopedic-dictionaries are necessary. Hence it is, that to-day every working man, in whatsoever department he may be engaged, has his own small reference library. If you call on any large mercantile firm, somewhere in the office you will observe a collection of reference-books, and if you visit a large manufacturing establishment you are likely to find a technical library, for reference, containing books descriptive of the special business of the company. Indeed, men like Edison have valuable working libraries, some of which could not now be easily duplicated, leaving orders with their booksellers to send them everything that comes out in their specialty. The making of works of reference has come almost to be a branch of literature by itself. Not only is large capital required but specially trained men, are necessary as editors. The forthcoming Standard Dictionary is, perhaps, the greatest undertaking of this kind now in course of preparation and from the fact that in its pages pharmaceutical terms will receive careful treatment at the hands of competent editors, members of the pharmaceutical profession it follows will be interested in its progress toward completion.

It would seem at first thought as if the pharmacist had no need of a dictionary. This, of course, with reference to the meanings of medical and pharmaceutical terms. The methods and processes for the preparation of official compounds are fully given in the pharmacopœia, and when further instruction is needed the "U. S. Dispensatory" will usually be found to give it. But the scope of both works is limited; as works of reference they are descriptive rather than definitive. The

publication therefore of a dictionary which will contain definitions of strictly pharmaceutical terms will be welcomed by pharmacists everywhere. The advance sheets indicate that considerable space will be given to definitions of plant products and of the terms used in materia medica and botany as understood of pharmacists. All of the leading plants will be defined with exactness, also their products, such as alkaloids, barks, gums, and oils, each in proper vocabulary order. Chemistry with the latest nomenclature, its newest elements, and improved processes will receive treatment at the hands of several specialists.

THE LOSSES AND GAINS OF PHARMACY.

A CRITICAL comparison of American pharmacy to-day as compared with what it was a quarter of a century ago, discloses the fact that during that period, many gains have been made, though it must be confessed that some losses have been sustained.

The gains have been mainly in the direction of widening, rather than deepening the culture of the pharmacist; of making a larger number of workers in the field, rather than of producing individually greater minds. For one pharmacist who had even a smattering of chemistry and of botany at that time, there are now hundreds thoroughly conversant with at least the elementary aspects of both sciences. However much criticism may be launched at our Ph.Gs. it cannot be denied that taking them as a whole they are a vast improvement over the unschooled druggists of the first half of this century.

The losses sustained have been in that originality and boldness of thought, which did so much for pharmacy in general, and for American pharmacy in particular, two decades or so ago.

These two phases of change are closely inter-dependent, for it is a leveling up rather than a leveling down process that has rendered the individual less conspicuous.

AN able, if somewhat bilious, editor refuses to be comforted because of the sad falling away from the high standards which he notes in the value of the original communications presented at the various pharmaceutical association meetings and in current pharmaceutical literature.

It is very likely true that there are fewer really remarkable papers presented at the association meetings now than formerly, but taking the whole field into consideration there are certainly a larger number which show a fair degree of ability. The fact is that the day of the association as a factor in science is waning. This is due to the increase in the facilities for communication between scientists afforded by the mails and by the rapid and cheap transportation and lastly to the increase in the number and value of the scientific periodicals. For just here we must take issue most decidedly with this.

It is not alone in pharmaceutical circles that the scientific value of association meetings is deteriorating. The same holds true in the field of chemistry and of science in general, as witness the diminution of interest which has rendered the re-organization of the American Chemical Society a necessity and which is so marked among the members of the American Association for the Advancement of Science. These facts are matters of current opinion among the more thoughtful and have no claim to be considered as newly discovered, though it is but fair to state that they are not universally admitted.

By publishing the results of his researches in the journal or journals devoted to his especial field, the scientist can not only reach a larger audience than by presenting them before a society, but he can do so more promptly and at less outlay of both his time and money, frequently, even, receiving remuneration instead of being put to an expense.

The limitations of space forbid a presentation of a comparative analysis of the literature of the day with that of a quarter of a century since, and for the present we must be content to simply record it as our opinion that, taken as a whole, American pharmaceutical journalism has made great and substantial progress.

The idealist may deplore the space wasted in the technical press on the trade aspects of the pharmacist's calling, but if that space is an excess over and above what is devoted to its scientific side, science is a distinct gainer thereby, for if the unscientific can be taught to read this portion of the trade journals, some of them will gradually become interested in the portions of periodicals which deal with the scientific side of pharmacy.

NOR does it follow that the usefulness of the pharmaceutical association has passed away merely because it has lost some of its importance as a factor in the advance of science. The loss in this direction has, to a certain extent at least, been offset by a gain in the value and interest of that portion of the proceeding, devoted to the business aspects of the pharmacist's calling.

FRIENDLY COMMENT.

Enclosed please find check for $3 in payment of two years' subscription in advance to the AMERICAN DRUGGIST AND PHARMACEUTICAL RECORD. I like your paper the best of any we have seen yet and think it was a wise thing to make it a weekly journal. Your "Tips on Advertising" are of great use to country druggists, and I hope to see more in future numbers.—*B. O. Kyseth, Kyseth & Tolleson, Lanesboro, Minn.*

Your consolidated journal, which is a good one, bows itself in with the announcement that the "likes of me" are to secure the combined periodical to the expiration of our subscriptions.

The great event of the drug trade is a weekly issue of a reliable and capable journal. The monthlies are too far away—this "daily newspaper age" can hardly be married to a periodical that comes out only twelve times a year, no matter how able and profound it may be. I expect to continue my subscription after my present time has expired.—*Joseph A. Tozier, Brockport, N. Y.*

Written for the American Druggist and Pharmaceutical Record.

PECULIAR COLOR CHANGE IN TITRATING LACTIC ACID.

By Wilbur L. Scoville, Ph.G.,

Massachusetts College of Pharmacy.

In titrating a sample of lactic acid some time ago to ascertain its percentage strength, a peculiar reaction was observed.

Upon adding normal soda solution to a known quantity of hot diluted acid, phenolphtalein being used as an indicator, the pink color indicating an alkaline reaction was obtained as usual, but quickly disappeared upon standing.

Upon adding more alkali the color reappeared, only to disappear more slowly after each addition, until several c.c. of alkali had been added in excess of that required to produce the first color, and the strength indication had increased from 73 per cent. to about 89.5 per cent.

The acid under examination bore the label of a well-known and reliable manufacturer, and was marked "U. S. P."

The pharmacopœial standard for lactic acid being 75 per cent., the questions naturally arose, Is this acid below the standard as indicated by the first change of color? or is it so far above as the final change would indicate—which seems very improbable.

Also, Why should this change in color occur at all? no such change taking place with any other of the pharmacopœial acids.

Several determinations with phenolphtalein giving concordant results, litmus, turmeric and cochineal were tried as indicators, and similar discrepancies noted with each.

These did not show as great sensitiveness to the acid as did phenolphtalein, but in all cases there was a gradual fading of the alkaline-color first obtained, and a point finally reached at which the alkaline reaction was permanent. The results were all intermediate with those obtained with phenolphtalein, using hot solutions.

Gravimetric estimations were then tried, using pure carbonate of calcium and digesting half an hour, and two hours respectively, discordant results being again obtained. It was noticable however that the gravimetric results were both between 85 per cent. and 91 per cent. Signifying that the acid was much above rather than below the pharmacopœial strength.

Recently J. A. McDonald, Ph. G. in a thesis presented to the Massachusetts College of Pharmacy has verified these reactions using three acids of different grades of purity, and five different indicators.

With phenolphtalein these gave strength-indications of 75.2 per cent. to 89.7 per cent. 72.9 per cent. to 81.9 and 74.5 per cent. to 90. 5 per cent. Boiling nearly two hours was required to reach the higher figures in each case.

The use of normal barium hydrate solution, gave the same results.

If an excess of alkali be drawn into the acid solution, and the mixture boiled for half an hour, then the excess estimated with normal acid solution, results are obtained corresponding to the highest figures by direct titration.

To ascertain whether this change is due to a secondary reaction with the alkali, or to the influence of water, a sample of acid was taken and diluted to about 15 per cent. with water, and allowed to stand. The apparent strength gradually and slowly increased in the cold. Upon boiling a portion the strength indication arose from 14.9 per cent. to16.2 per cent., showing that a reaction takes place between the acid and the water used in diluting it.

This shows lactic acid to be a very peculiar acid, and the explanation is interesting.

Lactic acid is found in sour milk, in the sap of the grape vine, in saliva, in opium, and in many fermented liquors. It is obtained commercially either by mixing the lactic ferment *penicillium glaucum* with sugar solution or starchy liquids, and allowing the fermentation to proceed, or by action of caustic alkalies upon sugar.

The neutralized acid is then liberated with sulphuric acid, and again neutralized with zinc carbonate. The zinc lactate thus formed is then purified by recrystallization, and the lactic acid again liberated by sulphuric acid and concentrated by evaporating upon the water bath.

The acid thus obtained is of a syrupy consistence and has a specific gravity of 1.21 to 1.24 and consists of a mixture of true lactic acid and *lactic anhydride*—the latter being formed by heat of evaporation, even in presence of the small amounts of water present.

This anhydride is formed by elimination of one molecule of water from two molecules of acid, and is called *lactic anhydride*, *lactolactic acid* or a *lactone*.

$$2\ HC_3H_5O_3 - H_2O = HC_3H_5O_2{,}C_3H_4O_2$$

It partakes of the nature of an acid, an alcohol, and an ethereal salt.

This anhydride reabsorbs water very slowly in the cold, more rapidly when heated, and becomes true lactic acid, thus accounting for the change in color previously spoken of in titrating.

This being true the pharmacopœial lactic acid consists of about 75% free lactic acid, and anhydride representing nearly or quite 15% more, making it equal to an 89 to 91% acid in saturating power. The full saturating power may be quickly ascertained by weighing out 4.5 G. of the acid, diluting with 20 to 25 c.c. of water, then an excess, or about 50 c.c. of normal potassa or soda is drawn in, after addition of a drop or two of phenolphtalein solution. After boiling the mixture for fifteen to twenty minutes the excess of alkali is ascertained by normal oxalic or sulphuric acid. The number of c.c.'s. of alkali required multiplied by two gives the percentage strength of the lactic acid.

Presence of Mind in Poisoning Case.

An instance of rare presence of mind attended by success in the use of an antidote to poisoning is mentioned in a recent issue of the *Scientific American.*

The five-year-old daughter of Dr. Sterling, Sag Harbor, N. Y., while playing about the house found a bottle which had formerly contained citrate of magnesia and still bore the label. The child put it up to her lips and took a long swallow.

With a scream she dropped the bottle, and began to clutch her little throat in an agony of pain. Her father, who had heard her screams, found that what the little one had taken for citrate of magnesia was oxalic acid. Seeing that not a moment was to be lost, if he wished to save the child's life, the doctor looked about for an alkaline antidote.

Seizing his penknife the doctor sprang to the white-washed wall and scraped some of the lime into his hand. This he threw into the glass partly filled with water, and poured the mixture down the almost dying child's throat. The antidote took effect at once. The intense pain caused by the burning acid was alleviated, and soothing, mucilaginous drinks to cool her blistered mouth and throat did the rest.

PRIZE COMPETITION.

A Uniform Price Scale For Prescriptions.

By George Cutts, New York.

Can such a price-scale be established and maintained? Even a cursory view of this matter compels us to answer No. Theoreticallyideally we wish to answer Yes.

A uniform price-scale among all druggists, is we believe to a majority of the trade, a great desideratum. But who can hope for such an outcome while there is such a want of fealty and trust among the members of the pharmaceutical craft.

Again the public have much to say in deciding what they will pay for prescriptions. It has been said "the public loves to be humbugged." This is only one way of stating that the public has its own opinion as to what is value. The same inclination is observed by those in the management of transportations. Some classes of freight will bear a high tariff while other classes must be put too low all because the shipping public prefer it so.

Some stores, some classes of custom, some localities permit a higher range of prices than others.

In some of the large stores perhaps the price is never disputed while the majority of pharmacists frequently meet the customer who shops with his prescriptions. In a sense the public prefer a uniform price-scale, that is they will pay as much for a dose of inexpensive medicine as they wish to for an expensive one, unless an explanation is attempted. They will pay ten times the rate for one dose than they wish to for ten doses, yet they are prejudiced as well by the size of the bottle or package, number of doses, etc. Again if the price is anyways low they think it inferior, if very high they suspect imposition.

Somewhat of strategy must be used by most pharmacists to get a just compensation for the product of their skill and time. They may justly take into consideration the number of doses, though the material may be inexpensive aud take advantage of their suctomer's prejudice sometimes as well as often yield from the same cause.

Judgment, tact, a just estimate of the value of his skill and time, fealty to the members of the craft, a desire to give good value, considerable sympathy for the unfortunate poor—all these assist in justly fixing the price for prescriptions.

Consideration of this matter lead us to conclude that a uniform price scale among *all druggists* can hardly be established and maintained. Nevertheless it should be aimed at, attempted if not attained. Here we suggest that on all prescriptions on copies returned to the customer after being filled the price charged be marked in plain figures. Then if all other druggists who afterwards prepare it will charge the same price, something will be done to promote harmony and good feeling among the trade.

However, much may be done to procure uniformity in prices in our *own stores* by a scheme something like that which follows. The writer has found this to work well in his own store. This exhibit is only intended to suggest what may be done, every druggist, of course, may revise it to suit his own judgment as to what is value.

This schedule of prices and suggestions headed with a big N. B. should be kept within easy reach of the dispensary until its rules are familiar. If the proprietor or manager will watch the prices fixed by his assistants and criticize and suggest why the prices should be fixed so and thus, it will be found that all hands will get the habit of quickly summing the factors that should fix the price.

Probably every druggist will call to mind how frequently is heard the remark "druggists' prices differ so;" "your clerk, the other man,charged me so and so," etc.

Preparations readily prepared for prescriptions should have the dispensing prices marked on the containers.

The following is a general outline of a scheme for a price scale :

SCHEMATIC PRICE SCALE.

Powders,	10c. 15c. 20c.	25 to 30c.	30 to 35c.	
Simple,	one or two	four or six	ten or twelve	
	15 to 20c.	25 to 35c.	40 to 50c.	
Compound,	one or two	four or six	ten or twelve	
Pills and Capsules,	10 to 15c.	20 to 25c.	35 to 40c.	
	one to three	four to six	ten to twelve	
Mixtures liquid, internal,	20 to 25c.	30 to 35c.	40c. 50c.	
	one oz.	two oz. or three oz.	four oz.	
Lotions,	25c.	35 to 40c.	50 to 75c.	
	two oz.	four oz.	eight oz.	
Ointments,	25 to 30c.	35 to 40c.	50 to 65c.	
	one oz.	two oz.	four oz.	

Read carefully the following remarks :

a. These prices apply to drugs *not* over-expensive ; when the selling price of the medicine is higher than the scale the charge should be advanced at discretion.

b. The pharmacist's *time* and *skill* must be considered (but not over-charged for).

c. Ordinary preparations kept in stock will be dispensed at regular prices if policy suggests that no higher prices should be charged.

d. The *number* of doses may be considered in fixing the price ; frequency of dose as well. The same consideration applies to external remedies used *freely* or *sparingly*.

The Volumetric Estimation of Acetone.—The usual method for the determination of acetone rests upon the conversion of that body into iodoform, which is weighed. The method is slow and inexact, owing to the loss of iodoform by volatilization. These inconveniences are remedied by F. Robineau and G. Rollin, (*Monit. Scient.*, vii., 272, through *The Analyst.*) who convert the method into one in which the estimation is volumetric. The acetone, having been obtained in a solution free from substances that also give the iodoform reaction, is treated with excess of potassium iodide and caustic soda, and a standard solution of sodium hypochlorite run in until the conversion of the acetone into iodoform is complete, as evidenced by the appearance of a blue coloration when a drop of liquid, being titrated, is placed upon a piece of starch paper, moistened with a solution of starch and sodium bicarbonate. A mere trace of sodium hypoiodite, in the presence of caustic soda, gives a blue color with starch paper that is saturated with sodium bicarbonate. Certain precautions are necessary to obtain exact results. The liquid containing the acetone must be thoroughly alkaline with caustic soda, as otherwise more hypochlorite than the normal amount will be necessary to convert the acetone into iodoform. An excess of potassium iodide must be present. The dilution of the solution titrated must be nearly the same in all cases, and a similar strength of hypochlorite must always be used. The operation should not be conducted in a strong light, and the solution must be constantly stirred during titration. The standardization of the hypochlorite is effected by means of pure acetone.

Pharmaceutical Progress

Soda Mint Tablets.—Dr. McFarren gives the following formula:

Bicarbonate of soda	ʒ xii.
Gum arabic	ʒ i.
Oil of peppermint	ʒ iii.
Carbonate of ammonia	ʒ i. M.

Dampen with alcohol and water and make into five-grain tablets.

Chloral-Camphor Glycerin.—This combination is used in Germany as a topical application for certain soft ulcerous skin affections. It is made by rubbing together 5 parts of chloral hydrate and 3 parts of camphor, and dissolving the resulting liquid in 25 parts (by weight) of glycerin, heated to about 50°–60° C. In a short time the camphor crystallizes out, so that the solution must be made as required.

The Nessler Test for Ammonia, which has been used now for many years, is beginning to inspire doubts as to its accuracy in various circumstances. Professor L. de Konick has recently found that in ammoniacal solutions the Nessler test does not produce the usual yellowish brown precipitate in presence of alcohol, nor even a coloration. It is just possible that many other substances, especially those of an organic nature, may act like alcohol, or may act just the reverse, *i.e.*, show the color where no ammonia is present.

Tropacocaine as a Local Anæsthetic.—Hugenschmidt (*Sem. Med.*, *Br. Med. Jour.*) has, following the suggestion of Chadbourne, tried this drug as a local anæsthetic. The results have been in every way satisfactory, 10 drops of a 4 per cent. solution, injected hypodermically, being sufficient to produce complete anæsthesia without any unpleasant consequences. Such a solution possesses the advantage over a similar one of cocaine in being practically non-toxic, and also sufficiently antiseptic to prevent the growth in it of molds, etc.

Uricedin is lauded by the manufacturers as the most valuable remedy for all forms of disease having a uric acid diathesis, such as gout, rheumatism, etc. Dr. Felix Goldman has taken to examine it and states (*Pharm. Zeit.*) that one will not go far wrong if he assign it the following composition:

Sodium sulphate, dried	30 parts
Sodium carbonate, dried	10 parts
Sodium citrate, dried	60 parts.

Specimens examined at one time were alkaline while these examined later were acid in reaction, indicating a change in the composition of the mixture.

Gymnenic Acid.—The active principle of *Gymnena sylvestris* is gymnenic acid, the formula of which is $C_{32}H_{31}G_{12}$. It presents itself under the form of a greenish-white powder, having a sharp, acid taste; is very soluble in alcohol, but slightly soluble in water and ether. When the tongue is touched with gymnenic acid the taste is completely lost for sweet and bitter. The subjects of experiment are incapable of perceiving the taste of quinine or of sugar, while that of acid, salty, astringent or spicy substances is completely recognized. Availing himself of this fact Quirine recommends, before administering bitter remedies, that the mouth be rinsed with a 12 per cent. solution of gymnenic acid in alcohol and water.—*La Medecine Moderne.*

The Analysis of Rubber Goods.—D. Holde (*Mitt. könig. tech. Versuchs.*, 1892, x., 315, through *The Analyst*) supplements the work of Henriques, by the suggestion of a method for the determination of the oil in rubber, and its substitutes other than that which has been "vulcanized" by treatment with sulphur chloride. The unaltered oil is soluble in ether-alcohol, whereas rubber and its substitutes are not much attacked by this solvent. It is true that pure caoutchouc yields three to four per cent. of an oily substance when extracted with ether-alcohol, and a correction is therefore necessary. The mixture adopted consists of four parts of ether and three of alcohol, and is best used by allowing the rubber to stand in the ether for a day, and become swollen to a pulp, the mass being heated, if necessary, and then adding the alcohol. After the removal of the fatty oil, the analysis can be proceeded with in the manner indicated by Henriques.

The Keeley Cure.—Dr. B. D. Evans gives the following in the *Medical News*:

I. THE TONIC, OR "DOPE."

Auri et sodii chlor	gr. xii.
Strychnin nitrat	gr. i.
Atrop. sulph	gr. ¼.
Ammonii muriat	gr. v.
Aloin	gr. i.
Hydrastinin	gr. ii.
Ext. erythrox Fl	ʒ i.
Ext. cinchonæ co. Fl	ʒ iii.
Glycerin	ʒ i.
Aquæ destil	ʒ i M.

II. THE INJECTION, OR "SHOT."

Strychninæ nit.	gr. ix.
Aquæ destil	ʒ iv.
Fotas. perman. q. s. to color	M.

In addition to these two, an injection of a solution of chloride of gold and sodium is used to impress the patient, his attention being called to its rich golden color. Then the hypodermatic injection of apomorphine, which is given either with or as a substitute for the "shot" while the patient is allowed to drink whiskey.

Animal Charcoal.—Fiquier, a Montpelier pharmacist, discovered the absorbent properties of animal charcoal in 1811. Devosne used it in 1812 to purify the juice of beets. Its regeneration was first attempted by Dumont in 1828. In Austria the manufacturers of sugar use their bone-black in large fragments up to the size of a walnut and wish for a porous product. In Germany the grains of the black must not exceed the size of a filbert, and must be as hard and compact as possible. The proportion of carbon must be 8 per cent., and the moisture must not exceed 8 per cent. In France the animal charcoal is required in grains varying from the size of linseed up to that of a filbert. Certain consumers demand at least 10 per cent. of carbon and at most 6 per cent. of moisture. In England and America the product consumed is almost exclusively of the size of millet-seed, as hard and as spherical as possible. The bones before carbonizing are treated with light hydrocarbons of petroleum to remove the grease. The residue is dried at 70°, broken up into fragments, and charred in retort furnaces.—*Chemical News.*

Permanganate Pills.—Pills to contain permanganate potassium, silver nitrate or other easily oxidizable bodies, are massed best with kaolin, using vaseline as an excipient.

Vaccine Lymph in the Tropics.—In the tropics the air is so laden with germs and moisture that shoes acquire a bloom of mildew over night, while bookbindings fall to pieces under the combined influence of moisture and bacteria. Under these conditions it is of course almost impossible to preserve vaccine lymph in the ordinary way. Dr. T. F. Pidley of Rangoon, India, writes to the London *Lancet* that he has had most satisfactory results by preparing a paste in the ordinary way by mixing the scrapings of the vesicles with glycerin. This part he encloses in a collapsible tube holding about half a drachm of the parts and covered with a screw cap. He says further,"During the last ten years we have used in Rangoon a vaccinating instrument which I found absolutely necessary in using calf lymph. It consists of an ivory pencil, case, in one end of which are fastened the points of three or four needles; in the other is a tiny spatula of metal or ivory. With the latter lymph is well rubbed into abrasions made with the needles. I have in my waistcoat pocket a little tube holding about half a drachm of the paste; from this I can remove the screw cap and squeeze a particle of paste on to the point of the spatula and replace the cap securely in a few seconds A portion the size of a mustard seed is sufficient for three vesicles. In England, where the paste may usually be kept much longer than in hot climates, I believe that public vaccinators and general practitioners would find the method described convenient and satisfactory."

Nicotine and its Derivatives.

At the May meeting of the Berlin Pharmaceutical Society, Dr. A. Pinner presented a paper giving the results of his investigations of the bromine derivatives of nicotine (*Pharm. Zeit.*, xxxviii. 293). On dissolving nicotine in an acid, preferably hydrobromic acid, and adding bromine to the solution a syrupy, yellowish red fluid separates out. This is an additional product of 4 atoms of bromine to nicotine bromate.

At a higher temperature bromine forms two compounds; one of which is a perbromide of a new base of the composition $C_{10}H_{10}Br_2N_2O.HBr.Br_2$, the other the bromate of a second base $C_{10}H_8Br_2N_2O_2HBr$. By conducting the process properly both these may be isolated. The author gives the name *cotinine* to the base $C_{10}H_{12}N_2O$, and *ticoninine* to that having the formula $C_{10}H_{10}N_2O_2$. Dibromcotinine, unlike nicotinine, is a univalent base. Cotinine ($C_{10}H_{12}NO$) can be obtained by pouring diluted hydrochloric acid on the perbromide of dibromcotinine and adding zinc dust. It is a fine crystalline mass melting at 50° C, and distilling almost unchanged at 330° C. It is very readily soluble in water, alcohol, chloroform and acetone, difficultly soluble in concentrated soda solution, and is a strong monacid base.

Arsenic in Glycerin.

The presence of arsenic in glycerin destined for pharmaceutical purposes has excited considerable comment during the past year, and hence a paper by Dr. J. Lewkowitsch (*Engineering Magazine*) treating of the fact from a manufacturer's point of view, is highly interesting. The arsenic in the glycerin owes its existence to the arsenic contained in the reagents used in the manufacture, and cannot be removed by distillation, as has been stated. The fact of the matter is that all glycerin intended for pharmaceutical purposes is distilled and double distilled. Dr. Lewkowitsch, experimenting with the substance formed when arsenious acid is dissolved in glycerin, namely the arsenious ether of glycerol, $AsO_3(C_3H_5)$ found that at 250° C. it is decomposed, and hydrogen arsenide withot her volatile arsenious compounds is distilled over. It is quite evident that any arsenic contained in glycerin will distill along with it. According to Dr. Lewkowitsch, there is no know process for freeing glycerin from its contained arsenic. The only way then to obtain the pure product is to use only such reagents in its manufacture as do not contain arsenic. This is accomplished where the fats are hydrolized by means of water, whether in the liquid state under high pressure or as superheated steam. The lime process, which is still practiced, especially in the smaller works, should also yield an arsenic free product, while on the other hand glycerin from works using sulphuric acid saponification will contain arsenic, unless, as is unlikely, such acid should be free from the metal. Ten samples of glycerin were examined with the object of ascertaining whether pure glycerin was on the market. Three of these samples would have to be rejected, four contained very small traces, while three only were absolutely free from arsenic. There is still another source of glycerin, the so-called soap-lye glycerin, produced in the saponification of fats on a large scale. This particular source of glycerin has however been looked upon with disfavor, though not altogether justly, as Dr. Lewkowitsch proves.

Arsenic, though the principal impurity, is not the only one to be found in "chemically pure" glycerin, organic impurity as fatty acids, etc., or as "polyglycerols," being generally if not always present. Evaporation of a sample in a platinum dish at 160° C. affords a simple test for this residue and for the ash. Fatty acids, as butyric acid, etc., and other organic impurities, are readily detected by means of the ammoniacal silver nitrate test, though this is more rigorous than may be necessary.

Ptomaines.

Recent progress in the isolation of poisonous ptomaines forms the subject of a recent paper by Professor Thorpe.

Of late years much attention has been paid to the study of the putrefaction of albuminous substances of animal origin with the result that a considerable number of basic nitrogenous bodies, some of which are highly poisonous, have been isolated. These compounds were classed by the Italian toxicologist Selmi, under the generic name of the *ptomaines* (πτῶμα, a corpse). They are the products of the vitality of the micro-organisms which are concerned in setting up the putrefactive change. Their discovery has greatly modified our views as to the mode of action of pathogenic organisms, and it is now regarded as not improbable that the disturbances are due rather to the poisonous products elaborated by the organism than to the mere presence of the organisms themselves. It ought to be stated, however, that the attempts hitherto made to isolate the toxic substances which may be formed by the growth of pathogenic organisms have been attended with only partial success. Thus Nencki was unable to detect any toxic substance among the products of anthrax, and *Staphylococcus aureus*, a common organism in abscesses. yields only a non-poisonous base. On the other hand, Brieger, to whom we

owe the detection of a large number of these so-called cadaveric alkaloids, has found that the typhoid bacillus yields a poisonous substance which he has named *typhotoxine*; and he has also discovered that the bacillus of tetanus forms a base, now called *tetanine*, which give rise to symptoms which have a strong resemblance to those occasioned by the inoculation of the bacilli. All the ptomaines hitherto isolated are comparatively simple in composition and not very complex in chemical constitution. Some of them have been shown to be identical with bodies already known. Thus *choline* (χολή, bile), a non-poisonous alkaloid, originally found by Strecker in bile, in the brain, and in yolk of egg, and now known to be a product of the putrefaction of meat or fish, has been synthetized by Wurtz; while *neurine* (νεῦρον, nerve), a derivative of brain substance, originally confounded with choline, but differing from it in composition and in possessing intense poisonous properties, has been artificially produced by Baeyer and by Hofmann. Choline and neurine are closely related substances and can be readily transformed into each other. Another of the so-called corpse alkaloids, *cadaverine*, has also been synthetically formed by Ladenburg.

In 1870 Schmiedeberg and Koppe isolated the poisonous principle of the fungus *Agaricus muscarius*, which they named *muscarine*. Subsequently, Schmiedeberg and Harnack obtained muscarine by the oxidation of choline, which indeed accompanies it in many fungi, and from which it differs only in containing an additional atom of oxygen. It is noteworthy that muscarine also occurs with choline among the products of putrefaction of the flesh.

Some Famous Liqueurs.*

BENEDICTINE.

The invention of this delicious liqueur dates from 1510, and the ancient prescription employed in its fabrication is perpetuated with characteristic reverence. It was first compounded under the presidency of Antonio II., Abbé of Fécamp, by a Florentine monk, Don Bernard Vincelli. The renown of this liqueur is widespread. Its exquisite flavor, its digestive virtues, and its value as a remedy in epidemic diseases, recommend it to universal favor. The distillery of the Benedictine monks of the Abbey of Fécamp is one of the most important in France.

François Prunin held the elixir in high respect, and protested that it acted as an antidote to all his ailments, which was perhaps only his own way of saying that it warmed up the cockles of his heart when he was in low spirits. Before the Revolution it was one of the most fashionable liqueurs of the day; but, at that time, it encountered a powerful rival in the Liqueur d'Hondage, of which mention is made in the chronicles of that period. But this did not live long, and Benedictine once more became the vogue.

The Revolution drove out the monks and destroyed their abbey, and with them the secret of the composition of their liqueur was lost for many years. In 1863, however, M. Legrand managed to get hold of the archives of the ancient monastery, and, after studying them, found out the precious secret. He began to distil the nectar, and with so much success that two years later a company was started under his direction for the manufacture of it on a large scale. The old abbey was rebuilt as faithfully as possible, and the distillery adjoining it was organized in the most scientific manner, the whole together forming one of the most interesting sights to be seen throughout Normandy.

The Mineral Water Trade Review.

CHARTREUSE.

This celebrated liqueur only dates back a little more than sixty years. In 1830 it was quite a curiosity in Dauwhine, and even in Paris it was hardly known. It is made at the principal monastery of the Carthusiah Order, in the rugged mountains near Greenoble, in France. At Fourvoisie, at the entrance to the desert of the Grand Chartreuse, about five miles from the monastery, the monks distill three kinds of liqueurs—the elixir, the yellow and the green Chartreuse; the last named is thought the best. The monks, who number 60 fathers and 200 brethern, and some novices, are nearly all, except the fathers, actively at work in some way or other in the manufacture of this famous liqueur.

The distillery is under the supervision of a monk chosen for the purpose. It is true hands outside the monastery are engaged in the work, but they know nothing of the ingredients used, or the way in which they are mixed. It is said that this secret was discovered by an innocent looking young man who got himself received into the order, and, during the absence of the prior, stole the receipt from his desk. The prior did not prosecute him, but allowed him to make use of his discovery on the condition he kept it secret. The "faux père" is now established at Saint Laurent du Pont, where he fabricates Chartreuse, but it is not equal to that of the monastery. In order to form an idea of the quantity manufactured by the brethren, it may be stated that they pay £40,000 yearly to the State for duty on the alcohol used. All the profits go to the order, which is one of the richest in the world. The chief constituents of Chartreuse are the essential oils of balm, hyssop, angelica, nutmeg, and cloves.

There exist in France many other liqueurs fabricated by the religious congregations. The Trappists, for example, made a cordial which, although not so renowned as most of its competitors, is none the less held in high repute.

Amsterdam is noted for the manufacture of liqueurs and cordials, and the twenty five distilleries there produce about 400,000 gallons annually, besides 13,700 gallons of rum, arrack, and other spirits, which are annually exported from Holland. Curacoa is chiefly made at Amsterdam from the rind of the bitter orange imported from the Dutch West Indian island of that name. It is made either white or dark colored.

MARASCHINO.

This is a liqueur prepared in Italy and Dalmatia from a variety of cherry. The fruit and seed are crushed together, one part to the hundred of honey added, and the whole subjected to fermentation and then distilled and rectified. Sugar and water are subsequently added to flavor it, and it is then stored for some months to free it from empyreumatic flavors, Zara is the principal seat of production.

NOYEAU.

Noyeau is a white cordial, flavored with the kernel of a cherry (*Cerasus occidentalis*), or with the essence of bitter almonds. Kummel is a Russian liqueur, brandy or spirit, flavored with cumin or caraway seed.

KIRSCH.

Kirsch, or kirschenwasser, is a kind of white cherry brandy, distilled in Germany and France from the fruit and kernels of *Cerasus dulcis*. The best is made in the Black Forest when distilled along with the fruit itself. The flavor of the kernels is at the same time extracted, which gives the whole, when sweetened, the character of noyeau.

Scientific Nomenclature as Applied to Pharmacy—Hints Toward Its Understanding.*

By E. Lloyd Marks.

As many who work without a tutor are often disheartened at the unusual words they encounter, a few friendly hints may be acceptable, because reassuring: "*hinc illæ lacrymæ.*" Science terms are chiefly derived from Greek and Latin, that lend themselves with facility to the purpose; what otherwise could only be circuitously and perhaps harshly expressed, is then framed in a direct manner and euphoniously. Such terms moreover have general application, and are understood "from Indus to the Pole;" vernaculars have but limited use. On this account a prescription in Latin can be interpreted anywhere; it is not "caviare to the general," but how few are able to "do as they do in Rome."

From this it is evident that to dig up roots and learn prefixes and suffixes is profitable reading; the origins of words are then found and their meanings comprehended. Etymology is thus an important aid in study, what was abstruse becomes clear, and elementary difficulties disappear like fog before the sun's rays. All branches of science anastomose to form completeness, the separate parts fitting into display a great plan, just as the disjointed pieces of a dissected map may be dovetailed to represent an entire country; hence in learning what at the time may be thought only pertinent to a section, will be found of value (certainly not useless or irrelevant) to the finished work. Of course to merely learn a science term by rote, and there an end, is to be indolently superficial, and in the position of the unobservant, of whom it is said:

"A primrose on the river's brink
A yellow primrose was to him—and nothing more."

but what a wealth of advanced botany does it not include. While for purposes of study and composition it is essential that fearful and sesquipedalean words be employed, "when time shall serve" they will be found so lucid and apposite as to warrant them becoming household words, and the best to employ; many are now incorporated with, enriching our language, and are in daily use, though thought uncouth at their birth; and so intelligible and appropriate are they that their discard (even if possible) would be inconvenient. Of the hundreds that crowd for precedence as examples, "orient pearls at random strung," take but a few to realize this fact; telegram, photograph, microscope, atmosphere, philosophy, thermometer, aneroid, phylloxera, chalybeate, electrolysis, cryophorus, lucifer, theodolite, toxicology, geography, numismatics, trigonometry; their etymology is not *more* difficult than that of the words you now encounter, it is of the *same kind.* How expressive are such words, how concisely they convey what is intended; *they* are familiar, these you first meet with in your studies, *strange*, the only difference. By pursuing the study recommended the Slough of Despond ceases to have terrors, it becomes so filled in indeed as to present the safety of a firm macadam; moveover this verbal agriculture provides much collateral information, and the horizon of knowledge is correspondingly enlarged. It is evident, too, that were authors to stop and explain intrinsic terms books would become bulky and tedious to read; students are expected to understand them or to diligently dissect them, and so animate what otherwise would be indeed "dry bones."

Everything, however, is comparative; what *now* is intelligible, *was* obscure; what to-day seems difficult, to-morrow may render easy to be understood. Progress soon assures the industrious that he is relatively better informed than is the idle; that *he* knows more than does the novice, who in turn will occupy a similar position to *his* junior. Thus to the advanced there is no difficulty in the phrase, teratology may be displayed by apostasis in Lonicera, by gymnaxony of the placenta in Cuphea platycentra, by peloria in Tropæolum, and by erration in Leontodon; to tyros there will be amazement and perplexity when they "consider the lilies, how they grow," finding them to be monocotyledonœ sub-classed as petaloideæ, hypogynæ, with introse anthers, trilocular ovaries having axile placentation, and fruit either indehiscent or a loculicidalcapsule. How delightful when, like "swift Camilla o'er the plain," we skim airily over now obvious simplicities.

Every branch of science has its intrinsic nomenclature, the etymology of which should be searched out as occasion requires; a *few* examples however, are given as an incentive, as showing the value of what has been stated; their *familiarity* also may disarm indifference. In mineralogy we find carnelian, a *flesh colored* stone; celestine, a strontium mineral, is *sky-blue;* pyrope has the *appearance of fire;* stalactites result from *trickling drops;* anthracite, a *burning coal* (hence anthrax and carbuncle, inflamed tumors); amethyst, *against drunkenness;* a supposed prophylactic (this stone was the emblem of the tribe of Dan, in Hebrew a Judge, hence "sober as a judge" is opposite). Selenite, *pale* as the *moon;* psilomelane, a manganese mineral, *smooth black* in color and appearance. Some minerals and metals—*e.g.*, gold, crystallize as rhombic dodecahedra, solids with *twelve diamond-shaped faces.* In zoology, a snail is a gasteropodous mollusc, a *soft belly-footed* creature; megascolides is the *great earth-worm;* butterflies having scale wings are lepidoptera; beetles, sheath wings, coleoptera; fleas having *no visible* or apparent wings are aphaniptera.

Some fishes are acanthopterigynous, having *spiny fins;* ganoids have scales of *splendor;* the oyster belongs to lamellibranchiata, and so on. The words when dissected to show their origin are quite divested of harshness and complexity, rather are they invested with euphony and simplicity.

Chemistry is likewise rich in expressive terms; pyroligneous acid, made from *wood* by the aid of *fire;* crysophanic, *I appear golden*, etc., but modern names are rather compound words, devised to give genealogy, constitution, structure, and as much information as possible; on which account, too, substances get improved titles in accordance with requirements, for example hydroquinone is still known as such to photographers as a developer; a better chemistry title is quinol, while in full terms of its development it becomes paradihydroxy-benzene, from which a mental picture of its structure is at once seen and can be drawn. So also tetrahydroxymethylanthraquinone is explicit, and the yellow dye known in trade as orange iii is the ammoniodimethylamidoazobenzenesulphonate, "only that and nothing more," but lucid to a degree.

Botany, "that science of hard words," as it has been called, is fruitful in terms and appellation whose etymology is interesting; for example, Erythroxylon, *redwood;* Hæmatoxylon, *blood-red wood;* and melanoxylon, *blackwood*, are very familiar. Liriodendron, *tulip-tree;* toxicodendron, *poison-tree;* Xanthorrhæa, *yellow exudation;* cremocarp, *hanging-fruit;* rachis (the spine), axis of inflorescence; replum, *panel of a door;* Mesembryanthemum is *midday-flowering sprouts;* actinenchyma, *radiate tissue;* and attacenchyma, collenchyma and bothrenchyma are respectively *spindle-shaped gluey* (when moist), and *pitted-tissue.*

(*To be concluded.*)

Australasian Journal of Pharmacy.

Hæmogallol is used by Dr. Lang most successfully in cases of *anæmic neurasthenia*, or anæmia accompanying cardiac disease or dyspepsia, in doses of 5–10 centigrammes (¼–½ grn.) fifteen minutes before meals.

Medical Notes.

Pilocarpine injections of 1 to 2 centigrammes (1/6 to 1/3 grain), hypodermically, for four months very much improved a patient suffering from *elephantiasis arabum*.—Poulet in *Med. Week.*

Lævulose from Molasses.—The lævulose which Scherings have lately put upon the market is made from molasses. They invert the uncrystallizable sugar, and then heat with lime, whereby a crystallizable calcium compound of lævulose is formed, and is separated out. This is decomposed with carbonic acid, the pure lævulose remains in solution, and is easily obtained in colorless and solid form.

A New Treatment of Cholera.—Dr. Fedoroff, of Moscow, publishes in the March number of the *Zeitschrift für Hygiene*, some experiments made by him during last Summer in the treatment of cholera, by means of subcutaneous injections of a fluid prepared by adding cholera bacilli to an extract of thymus gland. The results were so far satisfactory as to justify further experiment.

Potassium Chlorate in Leprosy.—Dr. Carreau has treated a case of leprosy with very large doses of potassium chlorate. He gave from 150 to 300 grains of the drug daily for three days, and produced grave symptoms of poisoning. After the disappearance of these symptoms, however, the leprous tubercles were found to have almost entirely disappeared, the skin being left soft and wrinkled.—*Medical Record.*

Trional and Tetronal.—Both these drugs, according to *Amer. Jour. of Ins.*, have a marked hypnotic and sedative action, but trional is more serviceable as a hypnotic, and tetronal as a sedative. The resulting hypnosis is calm, and resembles closely natural sleep, and in a few instances only were unpleasant after-effects noticed, not at any time alarming. Fifteen grain doses of either drug produced, in from fifteen to forty-five minutes, a sleep of from six to nine hours' duration. As a sedative, ten to fifteen grains of trional are required, and five or ten grains of tetronal.

Poulticing the Ear.—Dr. Albert H. Buck, writing in the *International Medical Magazine*, says that while heat is one of the best remedies in painful inflammations of the middle ear, and the poultice is one of the best methods of applying heat, as usually put on the poultice has little effect. What should be done, he says, is first to fill the external auditory canal with lukewarm water, the head resting on the unaffected side upon the pillow. Then a large flaxseed poultice is applied over the ear, as hot as it can be borne. The column of water is thus kept warm and acts as a conductor of heat between the poultice and the inflamed surface.—*Medical Record.*

Rapid Process for Determining Organic Nitrogen in Urine.—The process of A. Petit and L. Monfet (*J. Pharm. Chem.*, 1893, xxvii., 297, through *The Analyst*) rests on the same principle of that of Kjeldahl, but with the modification that the ammoniacal nitrogen is finally estimated by means of an alkaline hypobromite. Ten c.c. of urine are digested with 5 c.c. of sulphuric acid in the usual way, with the addition of mercury, after which the solution is diluted with 20 c.c. of water and caustic soda added in small quantities at a time, the flask being kept cool with water. The liquid is left slightly acid, poured into a 50 c.c. flask, made up to the mark, and 10 c.c. corresponding to 2 c.c. of the urine, introduced into an urinometer and mixed with a solution of sodium hypobromite, made by adding 10 c.c. of bromine to 90 c.c. of strong soda lye and diluting with 75 c.c. of water. In the case of urine containing albumen the digestion with sulphuric acid is somewhat longer, taking about half an hour. For alkaloids containing a pyridine or quinoline nucleus, a digestion of 1¼ to 2 hours is requisite. For pyridine itself or analgelsin even 4 hours is not sufficient to insure complete oxidation.

The Grand Lama's Prescription.

Captain H. Bower, of the 17th Bengal Cavalry, is one of the most recent travelers in that secluded country of Tibet, which in all its barrenness is gradually being made known to the West by the explorations of modern travelers. From an account which the gallant captain gave of his experiences in the country at the Royal Geographical Society lately, it would seem that if ever Tibet should be opened up to trade, remedies for promoting the growth of the beard are likely to find a good sale there, for according to Captain Bower "anything like a decent beard is almost unknown in Tibet and the natives expressed great admiration for the beards of the travelers and wanted to know if they could supply them with any medicine that would make theirs grow. They were also eager to know if the explorers carried any English poisons about with them. Poisoning is very prevalent in Tibet. "If one offers a man tea," continues the captain's narrative, "he generally refuses it, unless some one first drinks a portion in his presence, and when offering anything to eat or drink, a Tibetan invariably ostentatiously takes some in order to show that there is nothing to be afraid of. We were also asked if gold, pearls and rubies found a place in the European pharmacopœias and much surprise was expressed when Dr. Thorold assured them that they had no medicinal value. The Talai Lama is regularly dosed with medicine, composed of those ingredients, so there is little to marvel at in Talai Lamas all dying young."

Dangers of Antiseptic Midwifery.

Schräder (*Centralbl. f. Gynäk.*, No. 16, 1893) endeavors to solve the question why antiseptic midwifery has not fulfilled expectations. He maintains that the poison of puerperal endometritis is often actually diffused through the system by intrauterine irrigation, so that a local and relatively harmless morbid process is

made general and deadly. In the "bad cases" noted by antiseptic obstetricians, rigors and fever followed quickly on an irrigation, the relation of cause and effect being undoubted. The veins and lymphatics are the diffusers of the infection. The stimulation of the uterine muscular tissue by the injection facilitates lymphatic absorption, already aided by increased intrauterine pressure. Vaginal irrigation is less dangerous, yet undoubtedly it may cause septic matter, which had escaped from the uterus into the vagina, to be sent back into the uterus again. Schräder observes that Döderlein has found that a streptococcus naturally exists in the vaginal secretions after labor, and is soon rendered harmless by lactic acid fermentation. Irrigation checks this salutary process. Schräder strongly condemns the application of caustics to puerperal ulcers. To pass a speculum into the vagina of a patient with a temperature over 100° F., and to apply caustics to the wounded cervix is to break one of the first laws of surgery—that wounds must be kept at rest. Thus lacerated perineums almost invariably heal up when repaired directly after labor, because the wound is left alone and not inspected for eight or ten days. A long discussion followed the reading of Schräder's paper at Hamburg. Olshausen cited Glöckner's statistics which were not in favor of prophylactic irrigation.

Sublimate Poisoning from Bougies in Induced Abortion.

Schräder (*Centralbl. f. Gynak.*, No. 13, 1893) read notes before the Hamburg Obstetrical Society of a serious case. A woman had severe asthma and it was deemed prudent to induce abortion. The vagina was washed out with a solution of lysol. Schräder passed into the uterus a bougie which had been disinfected in a 1 in 1,000 solution of sublimate and washed in carbolic acid. Next day two bougies which had lain in a 1 in 1,500 sublimate solution for fourteen hours were passed into the uterus, after the cervix had been swabbed with a 1 in 1,000 solution of the same salt. These bougies were found to be stained of a light pink color by the salt; they were washed in carbolic solution before introduction. They remained in the uterus twenty-two hours. Shortly after delivery diarrhœa and gingivitis set in; the temperature rose over 103° F. On the fourth day the symptoms reached their highest point; fourteen motions were passed. The child died shortly after birth. Schräder believes that the sublimate formed some powerful mercurial compound by blending with the lac which coated the bougie. In the course of the discussion on the case Staude said that sublimate was now discarded in the Hamburg maternity. The patients were washed externally with a 3 per cent. carbolic solution and the instruments were immersed in carbolic solutions. Only chlorine water was used for injections. Staude had seen collapse when the vagina only was washed with carbolic solution in a case of artificial separation of the placenta. Schräder noted Krukenberg's case, where 2 pints of a 2¼ per cent. carbolic solution injected into the uterus caused deep collapse. The patient died in ten days with carboluria and uræmia.—After *Brit. Med. Jour.*

Guaiacol Applied Externally.

Dr. S. Sciolla, of Genoa, has found that pure guaiacol, painted on the skin in different parts of the body (for instance over an entire limb, the back or abdomen), in doses of 2 to 10 c.c. [30–150 min.], is absorbed quite speedily, and produces the same therapeutic effects as the administration per os or by injection. This experience appears even to have proved that these applications of guaiacol abate fever-temperature energetically, both in phthisis and in all the pyretic diseases.

Though the physiologic action of guaiacol is produced by a single application of the medicament to the skin, it is still more energetic when the painted region is covered with muslin and then wrapped in waxed cloth or gutta-percha tissue. About 15 minutes after the patient has been painted with guaiacol, he has in his mouth the taste peculiar to this substance; his temperature begins to fall—a phenomenon sometimes accompanied with more or less abundant perspiration. The anti-thermic effect of the cutaneous applications of guaiacol is energetic—the temperature often falling to normal within a few hours. This defervescence is never accompanied with alarming phenomena (such as cyanosis), or with any disagreeable subjective symptoms; the anti-thermic action of the guaiacol causing, on the contrary, a feeling of perfect comfort.

This medicament, thus applied, is eliminated by the kidneys—the first traces appearing in the urine about an hour after the skin has been painted, and the maximum of elimination being attained at the end of 5–6 hours

Several applications of guaiacol may be made daily. Sciolla's largest daily dose has been 30 grammes (1 fl. oz.).

Similar experiments were made with creasote, but abandoned, owing to its caustic action on the skin (which is never observed with guaiacol).—*Sem. Méd.* through *Am. M. S. Bull.*

Elimination of Salol.

Le Progress Medical contains an article by Dr. Paul Cornet on the elimination of salol from the human system (*Ch. and Dr.*). It is generally assumed that the drug splits up in the system into salicylic and carbolic acids, both of which are eliminated by the urine. Dr. Cornet denies this. At all events, he gets negative results for phenol by Hayem's method—viz., distilling the urine (acidified with hydrochloric acid) and treating the distillate with sodium hypochlorite and aniline, whereby a blue color is produced. Dr. Cornet has never found the color sufficiently strong to warrant the conclusion that phenol was present. On the other hand he finds ample evidence of the elimination of salicylic acid, and his notes of the trial on a male patient of 32 are interesting. First, 60 centigrammes of salol were given, and it was an hour and a half after before indications of salicylic acid in the urine were obtained, and the indications continued for twenty-five hours. This result differs markedly from those previously recorded—eight, ten, fifteen, and twenty-five minutes being the intervals of appearance given by French authorities. Dr. Cornet confirmed his own result: the patient got ½ gramme, and an hour and three quarters elapsed before the salicylic acid appeared, and it continued for forty-eight hours. Next day it was two hours and a half before salicylic acid could be detected in the urine after the administration of 60 centigrammes of salol. When salicylic acid itself was given it was found in the urine three-quarters of an hour afterward. The experiments further show that salol slightly influences the excretion of urea; 1-gramme doses had the following results:

	Grammes.		Grammes.
Before	40.1	After	45
"	24.03	"	31.08
"	30.10	"	42.21

Uric acid is considerably increased; thus:

	Grammes.		Grammes.
Before	0.9	After	1.6
"	0.7	"	1.1
	0.8	"	0.7

Educational.

COLLEGES AND SCHOOLS OF PHARMACY

It is now almost two years since there appeared in the PHARMACEUTICAL RECORD the first fully complete, and accurate account of the colleges and schools of pharmacy of the United States and Canada which had ever appeared in print. In 1892 this was supplemented by a still more complete account, and we now present to our readers a review of the same ground with such additional data as are necessary to bring the information down to date.

To Philadelphia, at that time the scientific center of America, is due the honor of taking in 1820 and 1821 the initiative in establishing in this country teaching schools of pharmacy conferring degrees. New York City followed close on the heels of the Quaker City, organizing a college in 1829. The Maryland College was organized at Baltimore in 1840, Chicago in 1859, St. Louis in 1866, Massachusetts in 1867, the University of Michigan and Howard University in 1868; Kentucky organized the Louisville College in 1870, Cincinnati in 1871, California in 1872, the National, at Washington, D. C., in 1873; Pittsburgh began its lecture course in 1878, in Tennessee the Vanderbilt University, at Nashville, added a department of pharmacy in 1879; New York State added another college to the list in 1881, at Albany; Ohio gave the Cleveland School of Pharmacy, and Wisconsin added a department of pharmacy at its handsome university at Madison in 1882, while Indiana, which even yet cannot boast of a pharmacy law, added a department of pharmacy to Purdue University, at Lafayette, in 1883.

In 1885, Iowa, Ohio and Kansas added departments of pharmacy to universities already established. In 1886 three more colleges were added, Buffalo, N. Y., the Illinois College at Chicago and the Kansas City College, located in the same named city in Missouri. The University of Virginia also inaugurated a pharmacy course in this year. In 1887 Tulane University at New Orleans added a department of pharmacy. In 1888 Denver College of Pharmacy was organized in that beautiful city by the Colorado druggists.

In 1889 the Pacific slope added one more college to the list. which was located at Portland, Ore., and is conducted under the auspices of the Willamette University, and in Nashville, Tenn. the Meharry College, which was established in 1876 for the education of the colored people, added a department of pharmacy. Scio College, at Scio, Ohio, added a department of pharmacy in 1890, as did also the Ohio Normal College at Ada, Ohio, while a college for women was established in Louisville. In 1891 there were added three more to the list of pharmaceutical educators, the colleges being located at Detroit, Mich., Atlanta, Ga., and Brooklyn, N. Y. The only additions for 1892 are that departments of pharmacy have been added by the University of Minnesota and by the Northern Indiana Normal School at Valparaiso.

The first course of lectures of the New Jersey College of pharmacy was delivered during the Winter of '92–'93. Dallas organized the nucleus of a college in 1892, and a movement was made toward having a department of pharmacy added to the richly endowed University of Texas. At the meeting of the Nebraska association in the earlier portion of this month resolutions favoring the establishment of a college in that State were passed.

In Canada a college of pharmacy was organized at Montreal in 1867 and at Toronto in 1880.

We give below the various schools and colleges arranged alphabetically. The dates given are those of the establishment of continuous courses of instruction.

For the data given we are indebted to the officers of the several colleges, and we have endeavored to present the more important points that would interest the prospective student in a perfectly impartial manner.

All titles and degrees have been omitted in connection with the names of the teachers, as it would be well nigh impossible to make sure of having them all correctly given.

For details as to free scholarships, prizes, etc., recourse must be had to the announcements of the several colleges, which will be forwarded on application by the secretaries of the respective institutions.

	FOUNDED
Albany, Albany, N. Y.	1881
Atlanta, Atlanta, Ga.	1891
Brooklyn, Brooklyn, N. Y.	1891
Buffalo, Buffalo, N. Y.	1886
California, San Francisco, Cal.	1872
Chicago, Chicago, Ill.	1859
Cincinnati, Cincinnati, Ohio	1871
Dallas	1892
Denver, Denver, Col	1888
Detroit, Detroit, Mich.	1891
Illinois, Chicago, Ill.	1886
Kansas, Kansas City, Mo.	1886
Louisville, Louisville, Ky.	1870
Louisville (for women), Louisville, Ky.	1890
Maryland, Baltimore, Md.	1856
Massachusetts, Boston, Mass.	1867
National, Washington, D. C.	1873
New Jersey	1892
New York, New York City	1829
Oregon, Portland, Ore.	1889
Philadelphia, Philadelphia, Pa.	1821
Pittsburgh, Pittsburgh, Pa.	1878
St. Louis, St. Louis, Mo.	1866

SCHOOLS OF PHARMACY.

Cleveland, Cleveland, Ohio	1882
Howard University, Washington, D. C.	1866
Iowa University, Iowa City	1888
Meharry College, Nashville, Tenn.	1888
Northern Indiana Normal School, Valparaiso, Ind.	1889
Ohio Normal University, Ada	1889
Ohio State University, Columbus	1888
Purdue University, Lafayette, Ind.	1888
Scio College, Scio, Ohio	1889
Tulane University, New Orleans, La.	1888
University of Kansas, Lawrence	1888
University of Michigan, Ann Arbor	1866
University of Minnesota	1889
University of Wisconsin, Madison	1888
Vanderbilt University, Nashville, Tenn.	1887
Montreal College of Pharmacy	1866
Ontario College of Pharmacy	1888

Philadelphia College of Pharmacy ranks as the oldest and most successful in point of financial and numerical results, its attendance of students and roll of graduates. It began in humble quarters, and the early history of the college was one of struggle against adverse conditions, but the unselfish devotion of the more scientific of the Philadelphia pharmacists resulted in establishing the institution on a sound basis.

In 1867 it put up the building on North Tenth street, which then was thought to be large beyond all necessity for its wants. During the summer of 1892 a large six-story building was added to the front, which now presents an improving appearance on Tenth street. The lecture rooms were remodeled and the laboratories were increased one-half. All that modern ingenuity and skill can do has been brought to bear in producing this magnificent structure.

Its faculty are John M. Maisch, Joseph P. Remington, Samuel P. Sadtler, Henry Trimble, assisted by instructors C. B. Lowe, F. G. Ryan and F. X. Moerk. During the past session its attendance was 335 juniors, 321 seniors, and its list of graduates was 177, including three ladies. To the present time it has graduated in all 3,742 persons. The lectures are given in the evenings from 7.30 to 9.40, except on Saturdays, when the afternoon hours are 3.30 to 5.40. Quiz classes before and at the close of each lecture attendance. Laboratory classes are provided for individual instruction daily from 9 to 1 o'clock, or class gatherings in chemistry from 2 to 5 o'clock, as also in pharmacy, and a course of microscopy is also provided, but these are optional and not obligatory. The matriculation ticket, lecture tickets for two winters and the examination fee amount to $110; while for quiz instruction, microscope course, class instruction in chemical and pharmaceutical laboratories the cost is about $100 additional. During the term there are pharmaceutical and social meetings for the students, alumni and college members, which are of much interest. The award of prizes is quite liberal in number and scope. The lectures begin October 2, 1893, and continue until the close of March, 1894. During November and December there are examinations of the junior class, which must be passed successfully to enable the student to present himself for the final examination of the junior class in March following. From the seniors there is required a thesis as part of the final examination, a four years' experience in the business and two winters' attendance at a college of pharmacy. For prospectus, address T. S. Wiegand, 145 North Tenth street, Philadelphia, Pa.

College of Pharmacy of the City of NewYork, or more familiarly known as the New York College of Pharmacy, was organized in 1829, and graduated its first class of students in 1831. One of this class, George C. Close, lived until 1891, thus rounding out a half century of its existence, in which he had seen it grow from less than a dozen students to more than 300 at each session.

This college has every facility that can be utilized for the benefit of the student of pharmacy and in many respects possesses advantages superior to, or unrivaled by similar institutions. Its faculty are Charles F. Chandler, Arthur H. Elliott, Henry H. Rusby and Virgil Coblentz, assisted by five instructors, and with the more extended course of lectures and laboratory work, the curriculum is one of the most complete and practical offered by any institution. The museum is well equipped, its herbarium one of the most extensive, having had added to it the Canby Herbarium, which makes it the third largest in America; its library one of the best collections of the kind in the country; the quiz class instruction is ably conducted and its efficiency was well shown as an adjunct to the lecture and laboratory instruction by the fact of the large proportion of students who graduated, quiz instruction helping to weed out the inefficient and aid the proficient. The instruction in microscopy is excellent in its work and its practical value. The pharmaceutical laboratory under Professor Coblentz is a feature of unusual merit, and now has a very complete outfit for its special work. The entire expense of the two sessions, including lectures, obligatory laboratory work, quiz classes, microscopic work, and graduating examination, is $160.

The attendance at the lectures during last session was 351 students in all, and of the 136 seniors that applied for examination 112 were successful. The total number of graduates to date is 1,458, including 15 women. Prizes of gold, silver and bronze medals, and for special examinations in pharmacy, chemistry and materia medica, the best in each branch receives $100 in cash.

The next term begins October 16.

The new college building is under construction in Sixty-eighth street near the Boulevard, and in their new home there will be even better arrangements for comfort and instruction.

For the new prospectus, address the New York College of Pharmacy, 209 to 213 East Twenty-third street, New York City.

Maryland College of Pharmacy was organized in 1840, but permanent instruction began in 1856. The present building is a very comfortable one, erected but a few years ago, and is well fitted for demonstration, analytical work, and the usual studies. There are pharmaceutical, chemical and microscopical laboratories and each is well adapted to the work. Its faculty are William Simon, Charles Caspari, Jr., and David M. R. Culbreth, aided by Instructor John E. Seebold. The lectures are given in the morning and occupy seven hours each week for both seniors and juniors. Laboratory work equal to 100 hours in both junior and senior classes is obligatory. Both junior and senior students who achieve special merit will find their reward in prizes of value on commencement night. The total expense of two sessions including fees is about $150. Last Winter there were 120 junior and senior students and 45 graduates. Total graduates to date 625. For prospectus address J. W. Geiger, High and Pratt streets, Baltimore, Md.

St. Louis College of Pharmacy.—The twenty-seventh annual session in this institution closed with the graduating exercises on Apr. 20. With the increased facilities and accommodations offered by their new building professors and students are alike enthusiastic over the Winter's work. The first lecture course in this college was delivered in 1866, and so it ranks as fifth in age of pharmaceutical educators. Its able faculty are Otto A. Wall, James M. Good, Francis Hemm, Henry M. Whelpley and Gustavus Hinrichs. Three laboratories are comfortably fitted for work, and this is done during daylight hours, but the lectures are given in the evening, the lectures being followed by quiz instruction. The course covers six months and gives a most excellent practical and theoretical handling of all the topics that belong to pharmacy. The graduates of '93 numbered 45, and the total to date is 673. The course of two sessions' instruction is $127, with an extra fee of $10 for microscope class if attended. The classes of 92–93 numbered 182 members. The best of the class of graduates each year have a goodly award of prizes. For prospectus, address Prof. J. M. Good, St. Louis College of Pharmacy, St. Louis, Mo.

Massachusetts College of Pharmacy.—New England stands as a model for education and this college is a model one for excellence in all its details. The neat building, comfortable arrangements, complete outfit for practical demonstration in all departments mark it as an admirable institution. Although the

corporate body is quite old, lecture instruction does not date back farther than 1867, when it was owing to the perseverance of Professor Markoe that arrangements were made that have caused it to be permanent. The pharmaceutical laboratory is at present the most complete of any in the colleges of pharmacy of our land. The arrangement for instruction is such that juniors give their time to lectures and laboratory work in the first half of the week and the seniors the latter half. The expense for obligatory laboratory work, lectures, recitations, matriculation and graduating fees for a two years' course is about $140. Arrangements are made for more continuous and advanced laboratory work, and other special instruction. Preliminary examination and thesis are requirements, as well as four years' experience and two full courses of lectures. The attendance at the past session was 279 in all; 27 seniors graduated, making a total of 378 graduates to date. The regular exercises of the college cover a period of 34 weeks, beginning the third Monday in September, and end the third Monday in May of each year.

The course embraces the subjects of General, Pharmaceutical, and Analytical and Organic Chemistry, with practical work in the Laboratory, Toxicology, Physics, Materia Medica, Botany, Microscopy, and Theory and Practice of Pharmacy, with practical work in the Laboratory, and recitations in each of the departments. For prospectus, address Dr. C. C. Williams, Massachusetts College of Pharmacy, Boston, Mass.

Montreal College of Pharmacy, organized in 1867, has done good work for the advancement of pharmacy in that part of the dominion. In their present building they can accommodate about 100 students in lecture rooms and 64 in laboratory. The lectures are in the evenings from 8.30 to 10 o'clock, there being separate courses in English and French and occupying five evenings of the week. The faculty are T. D. Reed and H. E. Des Rosslers, materia medica and toxicology; Joseph Bemrose and C. A. Pfister, chemistry and pharmacy, and Prof. J. Bemrose, botany. At the last session there were 64 students and to date there are 150 graduates. Laboratory work requires from eight to ten hours per week during each session. The total expense of the institution for the two sessions is $68 for lecture and entrance fees. The course of study in this college is two years, and in addition to this the student has to serve an apprenticeship of three years, before he can present himself before the board of examiners of the Pharmaceutical Association of the Province of Quebec, for the "minor" examination, which, if passed, entitles him to be registered as a "certified clerk," and a further service of one more year, before he can pass the "major" examination and obtain the license as a Licentiate of Pharmacy.

University of Michigan.—This university in 1868 added a department of pharmacy and so led the way to the instruction of pharmaceutical chemists, which has to some extent been followed by other universities. The entrance to this institution requires a high order of education, and the student devotes the whole of his time for two sessions of nine months each to attendance on lectures, laboratory work, examinations, etc., and if he gains his Ph.C. it is because he has earned it. Presided over in this department by A. B. Prescott, one of the ablest of chemists and instructors, and aided by O. C. Johnson, A. B. Stevens and several others of eminent worth, the study of chemistry is no disagreeable task, even though it requires careful and continuous work. Theses are required, but not store experience, to obtain the degree. The university has four laboratories for this department, a library of splendid selection and large proportions, and provides for its students ample material in all lines of educations. The course of laboratory work is of excellent selection as to future utility to the graduate. The expense for a two years' course is $75 for residents of the State and $100 for others. During the past session the attendance in the department of pharmacy showed the usual steady increase.

A register of the alumni showing what each has done since graduation is sent upon request.

For this or for prospectus address School of Pharmacy, Ann Arbor, Mich.

Howard University, Department of Pharmacy.—Howard University is located at Washington, D. C., and its medical department was organized in 1868. The pharmaceutical department has a faculty of three professors, a chemical laboratory and hospital dispensary, which give practical pharmaceutical work. Lectures of one hour each are given by each of the faculty on Monday, Wednesday and Friday evenings from 6.30 to 9.30, while recitations and practical work are given at other hours. The faculty consist of C. R. Dufour, F. J. Shadd and W. H. Seaman, who lecture in this order, the last two lectures being also attended by the dental and medical students. The full course of instruction covers three Winter sessions of six months each and the expense $60 per session, or $180 for the full term of three years. During the past Winter six students graduated, making a total of graduates to date of 57 persons. For prospectus, address C. B. Purvis, 1118 Thirteenth street, Washington, D. C.

Vanderbilt University, department of pharmacy, located at Nashville, Tenn., was organized in 1879. The generosity of the Vanderbilts of New York City has bestowed upon this institution in all over $1,500,000. The main buildings are situated at the western end of the city, and are delightfully located in a park of nearly eighty acres. The department of pharmacy is in the University Hall, which is the main building, and all its needs are well cared for.

In all departments, the university had, during the session of 1892–93, 733 students, pharmacy claiming, however, but 29 of these. Its faculty consists of L. C. Garland, chancellor of the university; J. M. Safford, dean of the department; W. L. Dudley, J. T. McGill and E. A. Ruddiman, with four assistants and instructors.

An entrance examination in English grammar, arithmetic, geography, and United States history is required for admission. The course of study for the degree of Graduate in Pharmacy (Ph.G.) extends through two, that for the degree of Master of Pharmacy (Ph.M.) through three sessions of nine months each. Four years' practical experience in the drug business, including the time spent in attendance upon lectures and in laboratory work, is required before the diploma is delivered.

The tuition, matriculation, and incidental fees for a session of nine months are sixty-five dollars. Board can be had on the campus, with furnished rooms, fuel and light, at from twelve to fifteen dollars per month.

Besides the special equipments of their own department, the libraries, reading rooms, museums, literary societies, gymnasium and athletic field of the university are open to the students of pharmacy.

Lectures occupy to juniors nine hours per week, and to seniors eleven hours per week, while laboratory work is ten hours per week, to each class.

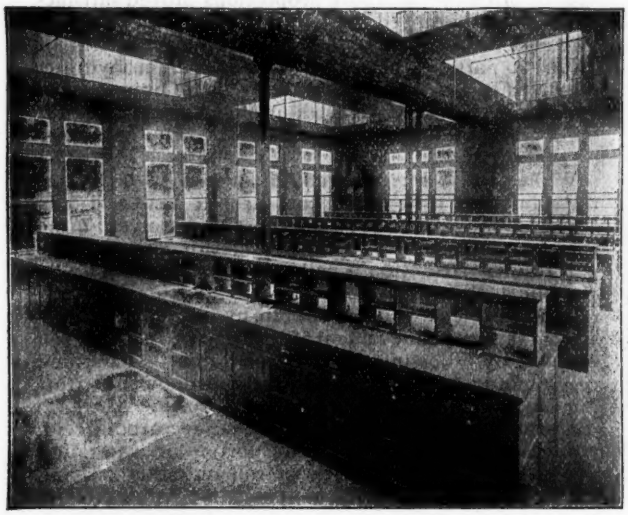
During the year 1892–3 there were 19 juniors, 9 seniors, and one graduate student. The total number of graduates to-day is 113.

For announcement apply to J. T. McGill, secretary.

The New Illinois College of Pharmacy.

Who can say that pharmaceutical education in the United States is not making decided progress when so many of the schools of pharmacy have just finished or are now erecting new buildings or making substantial additions to their houses?

One of the most enterprising of our pharmaceutical schools is the Illinois College of Pharmacy. Its career



LABORATORY FOR PHYSIOLOGICAL CHEMISTRY, ILLINOIS COLLEGE OF PHARMACY.

has been unique. In 1886 it began its courses of instruction with a class of 62, the next year the classes doubled; another similar increase followed in the third year, and during the past year the total attendance was 389. Such success could hardly have been attained except in Chicago, and it is not probable that it will ever be repeated. The requirements for admission and graduation have always been the same in that college as in the older pharmaceutical colleges and the fees are not materially different.

We publish here pictures representing some of the laboratories in the new building of the Illinois College of Pharmacy. That building is now completed in every detail, and two-thirds of it is used for the pharmaceutical classes, the remainder being occupied by special laboratories of the medical school of Northwestern University of which Illinois College of Pharmacy also is a department. The building is six stories, and cost $140,000.

Beginning with next college term, which opens Sept. 1st, the Illinois College of Pharmacy will offer two courses leading to different degrees. It will continue the same course for the degree of Graduate in Pharmacy as heretofore, requiring attendance during two full terms of about twenty weeks, and also offers a course of two full years for the degree of pharmaceutical chemist, substantially as given in the School of Pharmacy of the University of Michigan for the past twenty-three years.

The capacity of the new laboratories is sufficient for about 400 students taking these courses, besides affording additional accommodations and separate facilities for a considerable number of post-graduates and specialists taking advanced courses.

The school is open during ten months of each year, divided into two terms of twenty-one weeks each. The fees are $75 for each term of twenty-one weeks each. The requirements for admission and for graduation are the same as in other colleges of pharmacy. The time of the students is fully occupied, as each student receives over thirty hours of instruction weekly. Two-thirds of the school hours are devoted to the work in the laboratories.

A course of home study is also conducted by this college.

This college has a complete faculty for its own special work. All the instruction given is therefore perfectly adapted to the special requirements of pharmacy. The teachers are experienced men, well known by their professional work, and have had practical experience as pharmacists.

The executive committee having charge of this school consists of experienced pharmacists well known to the pharmaceutical profession and the business world, and for many years prominently identified with pharmaceutical education.

The faculty is as follows: Oscar Oldberg, dean, professor of pharmacy and director of the pharmaceutical laboratories; John H. Long,, professor of chemistry and director of the chemical laboratories; E. S. Bastin, professor of botany and pharmacognosy and director of the microscopical laboratory; W. E. Quine, emeritus professor of physiology, therapeutics and toxicology; W. K. Higley, associate professor of botany and pharmacognosy; Maurice A. Miner, assistant professor of pharmacy in charge of the pharmaceutical laboratory; Mark Powers, assistant professor of chemistry

GENERAL PHARMACEUTICAL LABORATORY, ILLINOIS COLLEGE OF PHARMACY.

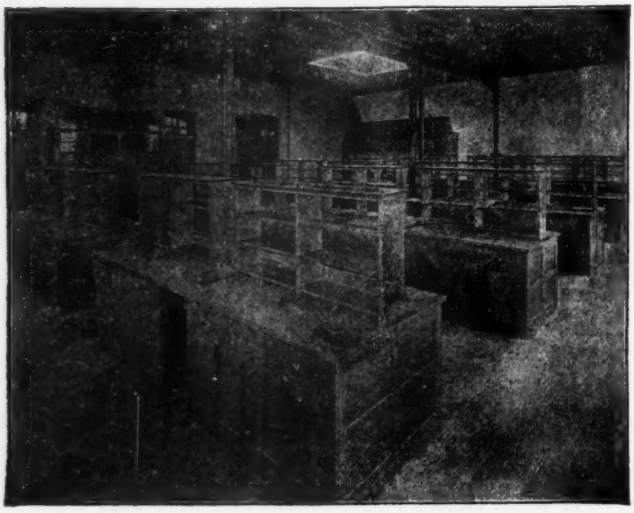
in charge of the chemical laboratory; Charles W. Patterson, resident student and instructor.

The next term begins September 1, 1893.

Tetramethyltriamidodiphenylmethoxytolylmethane, the chemical name of a new coloring matter, is probably the longest word in use by chemists to designate a single substance or "definite chemical individuum," as our friends Fritsche Bros. would express it. Hypnal, a much more familiar substance, is known to chemists as monotrichloracetyledimethylphenylpyrazalon, which leads us to remark that trade or trivial names have their advantages after all.

Water Soluble Carbolic Acid and Wood-Tar.

The use of crude carbolic acid and wood-tar for disinfecting purposes is rather wasteful because of their insolubility in water. E. Hirschsohn (*Phar. Zeit. f. Russ. Am. Jour. Phar.*), in a series of experiments, found that if 100 parts of so called 100 per cent. crude carbolic acid was agitated with 50 parts moderately finely powdered rosin and 6–8 parts sodium hydrate dissolved in 12–16 parts of water until solution resulted, a liquid was obtained giving an almost clear solution with ten volumes of water. The solution resembles "lysol," differing from it, however, in not being miscible with petroleum-ether, and in not producing the gelatinous mass upon addition of two or three volumes of water. Experiments with so-called 50 per cent. crude carbolic acid did not give a preparation dissolving perfectly in water; using the same proportions as above, the preparation resembled "creolin," giving with water an emulsion.



LABORATORY FOR ADVANCED AND SPECIAL COURSES IN CHEMISTRY, ILLINOIS COLLEGE OF PHARMACY.

In experimenting with wood-tar it was found that the same formula would not give satisfactory preparations with the different kinds of tar. While in the case of birch-tar the above proportions proved satisfactory, fir-tar required an entirely different formula. The best results were obtained by using 100 parts of fir-tar, 10 parts rosin and 6–7.5 parts sodium hydrate, dissolved in 12–15 parts of water. These preparations do not give entirely clear dilutions with water, but upon prolonged standing neither an oily nor tarry layer separates.

While heat is not essential for success it facilitates the solution of the rosin in the carbolic acid and tar; the sodium hydrate, however, must be dissolved in the specified quantities of water or inferior preparations will result. *Attention is called to the fact that crude carbolic acid is met with which will give good preparations with less rosin and sodium hydrate. Other oils, like oil of turpentine and oil of eucalyptus, can be made miscible by following the above directions. The same result can be brought about, it is claimed, by substituting crude oleic acid for the powdered rosin.

Using the so-called 100 per cent. crude carbolic acid, a product results, soluble in any portion of water, and makes a clear solution with petroleum ether. Using the 50 per cent. carbolic acid it was impossible to get a product dissolving in water or even forming an emulsion. Birch-tar, with oleic acid, gave an almost solid mass, which, with water, gave after some time, a turbid solution; but, here again, no proportions could be ascertained so as to make a clear solution. Fir-tar, however, by the modified formula, gave a satisfactory preparation.

GENERAL CHEMICAL LABORATORY, ILLINOIS COLLEGE OF PHARMACY.

The Properties of Arrow Poison.*

By Thomas R Fraser, M.D., F.R.S.,
Professor of Materia Medica in the University of Edinburgh,
and Joseph Tillie, M.D. (edin.)

Burton,† Cameron,‡ and other travelers have given accounts of much interest of an arrow-poison used in warfare and in the chase by the Wa Nyika, Wa Kamba, Wa Gyriama, and other tribes of Eastern Equatorial

APPARATUS ROOM, ILLINOIS COLLEGE OF PHARMACY.

Africa. The poison was stated to be prepared from the wood of the stem and root of a tree, which, however, was not botanically identified.

Several years ago an opportunity was given to one of us to examine poisoned arrows, and the poison used in smearing them, of the Wa Nyika tribe. While the pharmacological action of this poison was found to have a close resemblance to that of *Strophanthus* seeds, its physical and chemical properties enabled the conclusion to be drawn that the poison was not made from these seeds, but was chiefly composed of an extract prepared from a wood.*

These conclusions have been confirmed by the examination of further specimens of the Wa Nyika arrow-poison, and of the wood from which it is prepared. The specimens were most kindly sent to one of us, at various times between 1889 and 1892, by the Rev. William Morris, of the Church Missionary Society's East African Mission, and by Mr. Berkeley, the Administrator to the Imperial British East Africa Company at Mombasa.

These gentlemen have also sent the leaves and fruit of the plant, which have enabled us to identify it as an *Acokanthera;* but, as flowers had not yet been obtained, it has not been possible to determine the species.

In the present paper we propose to give a brief preliminary description of some of the most important of the results obtained by us in an extended examination of the chemical and pharmacological properties of the arrow-poison, and especially of the wood from which it is prepared, reserving fuller details until the flowers of the plant have been obtained.

We have found that the arrow-poison contains a crystalline glucosidal active principle, which in its chemical properties and pharmacological actions is identical with a crystalline active principle present in the wood, thus confirming the statement of the source of the poison.

In its preparation, an alcoholic extract of the wood was mixed with water, and the filtered watery solution was evaporated. Impure crystals appeared in the concentrated fluid, and their purification was effected by digestion of a hot alcoholic solution with charcoal, and subsequent recrystallizations from rectified spirit.

Thus obtained, the active principle occurs in the form of colorless thin needle-shaped crystals, which usually group themselves in tufts and rosettes. When crystallized from water has the form of quadrangular plates.

DISPENSING LABORATORY, ILLINOIS COLLEGE OF PHARMACY.

*Read before the Royal Society, London and printed in the *Pharmaceutical Journal and Transactions.*

† "The Lake Regions of Central Africa," 1860, vol., ii. p. 305.

‡ "Across Africa," 1885, p. 59.

* Fraser, 'On *Strophanthus hispidus:* its Natural History, Chemistry, and Pharmacology,' 'Edinburgh Roy, Soc. Trans., vol .xxxv., part IV,, 1890, pp, 966-67,

At a temperature between 55° and 60° F. the crystals are soluble to the extent of about 0.93 per cent. in distilled water; of 0.41 per cent. in absolute alcohol; of 0.45 per cent. in diluted alcohol of sp. gr. 838; of 2.4 per cent. of diluted alcohol of sp. gr. 0.920. They are less soluble in acetone, amylic alcohol, and petroleum ether; and are altogether insoluble in ethylic ether and chloroform. Much larger quantities are dissolved by hot than by cold water and alcohol.

Ether, chloroform, and petroleum ether precipitate the active principle in a crystalline form from solutions in strong and dilute alcohol.

A saturated solution in cold water is tasteless and neutral in reaction; and it is obviously affected by very few chemical reagents, including the ordinary reagents for alkaloids. Silver nitrate and mercurous nitrate, however, produce white precipitates. Tannin does not cause any change in saturated cold water solutions, but it throws down a copious white precipitate in cold solutions, prepared by saturating water at the boiling temperature, and this precipitate is soluble in an excess of the reagent and in water.

When to the crystals themselves a little strong sulphuric acid is added, a pink color is almost immediately developed, which soon darkens to a brick-red, and then slowly fades to pale-brown. Dilute sulphuric acid, with moderate heat, changes the colorless crystals rapidly to brick-red, and then gradually chocolate and green colors are developed.

The exact melting point is not easily ascertained. When heated to about 184°C., the crystals suddenly almost disappear, and the soft substance remaining undergoes little further change until a temperature of rather over 200°C. is reached, when the color becomes brown, and bubbles of gas are liberated.

No nitrogen or inorganic matter is present in the crystals. When they are heated at 100°C. in 2 per cent. sulphuric acid, a brownish amorphous substance is deposited, and the neutralized filtrate causes an abundant reduction in Fehling's solution, showing that the active principle is a glucoside.

Two concordant combustions made for use by Dr. Dobbin, of the chemical laboratory of the university, indicate that the probable formula of the substance is $C_{30}H_{52}O_{14}$.

These characters show that this active principle closely resembles, if it be not identical with, a crystalline substance separated by Arnoud,* by a more complicated process than the above, from the wood of a plant obtained in the Somali country; and, although the species has not yet been identified, the plant has, from an examination of the twigs and wood, been placed in the genus *Acokanthera*.†

On testing the pharmacological activity of the crystalline active principle obtained by us from the *Acokanthera* wood, we found that the minimum lethal dose for the frog (*Rana temporaria*) was between 0.00004 and 0.00005 grain per 100 grains of weight of frog. The latter dose always caused death, usually in from three to six hours; the former dose was not lethal. Rabbits died usually in little over an hour after the subcutaneous administration of from 0.00003 to 0.000035 grain per 100 grains (one four-hundredth to one five-hundredth grain per pound) of weight of rabbit.

The arrow-poison itself was found to have only one-fourth the lethal power of the crystalline active principle.

In a series of experiments on frogs and rabbits we found certain effects to occur so uniformly that they may be regarded as characteristic to the action of the poison.

In the frog the prominent effects which follow the subcutaneous injection of large lethal doses are:—Slowing and intermittence of respiration; gaping of the mouth, often accompanied with straining movements like those of vomiting; fibrillary twitching of muscles, especially at the seat of injection; impairment of motor-power and of co-ordination; disappearance of the cardiac impact; cessation of respiration; and gradual enfeeblement and loss of reflex and voluntary movement.

On opening the thorax, the heart is found motionless, the ventricle is extremely systole, the auricles distended with blood, and the whole heart inexcitable to mechanical or electric stimulation. When, however, the precise minimum lethal dose has been administered, the heart is found to have been arrested in extreme diastole, and it responds to stimulation. Immediately after death, stimulation of a motor nerve causes muscular contraction; but, soon thereafter, the muscles cease to respond to stimulation of the nerves or to direct irritation, and become acid in reaction and rigid.

In the rabbit, after the subcutaneous administration of a minimum lethal dose, the most important phenomena are gradual impairment, and failure of the heart's action, of respiration, and of motor power. Just before death the cardiac pulsations become slow and extremely feeble, but the rate is estimated with difficulty by palpation of the thorax on account of frequent muscular twitchings. The respiration is rendered slow, irregular and shallow. Inspiratory difficulty occasionally becomes so great that death from asphyxia seems impending even when the cardiac pulsations and general motor power appear good. Motor power is usually so much reduced before death that the animal lies prostrate; and only a few feeble movements of the body indicate the arrest of the heart. When the dose is large, or when the poison acts with unusual rapidity, the heart is paralyzed before the general motor depression has set in, and sharp convulsive movements follow the arrest of the circulation. It is sometimes difficult to say whether the cardiac or the respiratory movements cease first. Usually, respiration is distinctly continued for a brief period after the heart can no longer be felt to pulsate, and on *post-mortem* examination, the bright red color of the left auricle and the pulmonary veins contrasts strongly with the dark color of the right auricle. Sometimes cardiac movements occur after the respiration has finally ceased, but immediate *post-mortem* examination reveals that the pulsations are mere irregular movements—altogether insufficient to sustain life or to indicate that the arrest of the respiration was the cause of death. The left ventricle is usually found contracted and nearly empty, and the right ventricle and the auricles filled with the blood. Most frequently the heart is motionless, and does not respond to mechanical or electrical stimulation, but it sometimes shows spontaneous quivering movements, and, for a very brief period, may respond to stimulation. The lungs are of a light pink color. After death, the motor nerves soon lose all influence over the muscles, and, in a very brief period thereafter, the muscles become inexcitable, acid in reaction, and rigid.

On analyzing the action of the active principle we have found that, in the frog, the slowing, irregularity and cessation of respiration, and the gaping movements of the mouth are not necessarily primary actions, but may be secondary to the arrest of the circulation, because control frogs, whose circulation has been mechanically arrested, exhibit this phenomena within a similar period of time. In rabbits, artificial respiration does not prevent death from cardiac failure; but the impairment of respiration probably contributes in them to the fatal result in the case of doses bordering upon the minimum lethal.

The fibrillary muscular twitchings which occur in rabbits as well as in frogs are due to a primary action upon the endings of motor nerves.

The disappearance of the reflex and voluntary movements after the administration of small lethal doses is due

* *Comptes Rendus*, vol, cvi, 1888, p, 1011, and vol, cxvii, 1889, p, 1162.
† *Ibid*, vol, cvii, 1889, p, 1162, and *Bulletin Gen de Therap*, vol, cxvii, 1889, p. 107.

to paralysis of the nerve centers, and not to a peripheral action, for when one part of the body is protected, reflex and voluntary movements cease in the protected and unprotected parts at the same time. This central paralysis, however, is almost entirely due to the failure of the circulation, and resembles the paralysis in unpoisoned control frogs whose circulation is arrested. When large doses of the poison are administered subcutaneously to frogs, the depression of reflexes is partly due to peripheral causes, because, when one part is protected, that part exhibits more rapid and vigorous reflexes than the unprotected parts. This difference is largely due to a paralyzing action on the muscles. It may, however, be partly caused by depression of sensibility, for when the action is limited to one part, stimulation of the skin in the poisoned area fails, after a time, to cause reflexes in the unpoisoned parts, although stimulation of a poisoned nerve trunk still excites reflex movements. The action of large doses upon the sensory nerves is well shown by applying one-hundredth of a grain in solution to the cornea of the rabbit, when anæsthesia, lasting for several hours, along with some contraction of the pupil, is produced.

The motor nerves retain their influence upon the muscles until the latter show distinct signs of poisoning; but the muscles still react to strong, although not to moderate, electrical stimulation after stimulation of their motor nerves is no longer able to excite contractions.

The action on the heart is very pronounced. When a large dose is injected subcutaneously in the frog, or applied directly to the heart, the pulsations become slow owing to a great increase in the duration of the systole. Unequal contraction and relaxation of parts of the ventricular wall occur, the diastolic expansion become less and less, and, within twenty minutes after poisoning, the ventricle is arrested in the extreme and permanent systole. The auricles contract for a short time longer, but cannot empty themselves, and become arrested in a dilated state. The heart no longer responds to stimulation, and the muscle of the ventricle quickly acquires an acid reaction. After arrest of the heart, respiration may continue irregularly for so long as an hour, and for a time the frog can jump about actively.

The action of small doses upon the heart is, in several respects, essentially different from that of large doses. Several hours after the administration of the precise minimum lethal dose, the cardiac pulsations become very slow. The slowing, however, is not due to a lengthening of the systole, but to a great prolongation of the diastole, and of the succeeding pause in the heart's action. Gradually, periods of standstill occur in extreme diastole, and, when the heart spontaneously resumes beating, one or more auricular contractions precede those of the ventricle. The systolic contraction is extremely powerful. The condition of diastolic arrests often lasts many minutes at a time, and finally spontaneously pulsations cease. At this stage, the dilated heart responds, by one or more contractions, to any form of stimulatiom, but, if the stimulation be frequently repeated, the relaxation after each contraction becomes less and less, and the ventricle slowly passes into moderate, but permanent, systole. During these events, the inhibitory function of the vagus is not only retained, but increased. The diastolic arrest of the heart is not dependent upon "inhibitation," however, for the condition is neither removed nor prevented by the administration of atropine. The accelerator action of the vagus is retained. The diastolic arrest is apparently due, therefore, to a direct action of the poison upon the motor ganglia and muscle of the heart.

The action upon the blood-vessels was found to be very slight. One part of the crystalline active principle in 10,000 parts of normal saline solution (0.75 per cent.) produced, when circulated through the vessels of a pithed frog, about the same effect as the pure saline solution, whereas 1 part of Merck's purest digitaline (soluble in water) in 50,000 parts of normal saline solution produced an extreme and rapid reduction in the caliber of the vessels. The difference in action upon the vessels is much accentuated by the fact that the lethal power of the digitalin in frogs was found to be only about one-fiftieth of that of the active principle of the *Acokanthera* wood.

In blood pressure experiments upon rabbits, the repeated administration of small non-lethal doses by injection into the jugular vein produced a remarable slowing of the pulse, the verticle height of each pulse curve indicating at the same time a great increase in the force of the ventricular contraction. The blood pressure was usually found not to be increased, and when increased was evidently not the cause of the slow pulse. When rise of blood pressure from asphyxia was guarded against by carrying on artificial respiration, the pressure was little affected, except when a marked fall occurred before death. The inhibitory action of the vagus was found to be retained, and the nerve proved to be intimately concerned in the early slow pulse, because the division of the vagi or the administration of atropine produced an immediate change on the tracing, the pulse becoming rapid and the movements relatively small. The further administration of the active principle restored to only some extent the original character of the tracing. When large doses were administered, the original slow pulse quickly became rapid and irregular, the blood pressure rose somewhat, and the respiration became disordered. The pressure then rapidly fell, and the cardiac pulsations became slow, intermittent, and feeble, and finally ceased before the pressure was at zero.

The action upon the circulatory, muscular and nervous systems, therefore, closely resembles, if it be not identical with, that of strophanthin.

Note.

In 1880, an arrow-poison used by the Wa Nyika and Wa Kamba tribes was examined chemically by Gerrard,* and a non-crystalline substance, giving the reaction of a glucoside, was separated, and was found by Ringer* to be a powerful muscle poison, which caused death by arresting the heart in systole. In 1887, Laborde† examined some features of the physiological action of a Wa Kamba arrow-poison, obtained from a misssonary, M. A. Le Roy, and stated by him to be composed of parts of eight plants. Laborde found that the poison caused death by arresting the respiration and heart, and he came to the conclusion that the primary and predominant action was exercised upon the cardio-respiratory centres in the medulla.

In 1888 MM. Langlois et Varigny‡ examined the action of poisoned arrows obtained from the Somali country, and found that the poison caused the arrest of respiration and of the heart, which they attributed to paralysis of the medullary centers.

In the same year MM. Gley et Rondeau,§ and also M. Gley‖ separately, examined some points in the action of ouabaïn, the active principle separated by Arnaud from wood believed to be the source of the Somali arrow-poison, and concluded that the effects produced were due essentially to an action upon the medullary centers. Dr. Sailer,¶ in 1891, after an extended examination of the actions of ouabaïn, arrived at conclusions which are not in accordance with those of the French observers, viz.: that the cardio-respiratory centers in the medulla are not primarily affected, that the lethal action of the poison is exercised directly upon the heart, and that the asphyxia is a secondary phenomenon.

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* *Pharm. Journ. and Trans.*, 1880-81, p. 835.
† *Comptes Rend. de la Soc. de Biol.*, 1887, vol. iv., pp. 52, 370.
‡ *Ibid.*, 1888, vol. v., p. 419.
§ *Ibid.*, p. 421.
‖ *Comptes Rendus*, 1888, vol. cvii., p. 348.
¶ *Therapeutic Gazette*, 1891, vol. xv., pp. 727, 814.

Chlorodyne and Similar Preparations.*

By A. B. Stevens.

During the last decade various mixtures of chloroform, morphine, capsicum, etc., have come into common use under various names, as chloranodyne, mistura chloroformi et opii, tinctura chloroformi et morphinæ, etc. By comparison of the various formulas in the accompanying table compiled by Messrs. Wells and Klein, it will be seen that there is a great variation in the strength of the more active constituents. It is evident that a preparation so universally used, should be uniform in strength. This was evidently the idea of the British when they introduced the preparation *tinctura chloroformi et morphinæ* and in a footnote stated that it was a substitute for Brown's chlorodyne. They doubtless attempted to make a preparation not only similar in properties but in appearance to the original.

Our own *National Formulary* the Committee aimed at uniformity by introducing a preparation under the name of *Mistura Chloroformi et Opii*, which is a modification of the British tincture of chloroform and morphine.

This preparation forms a mixture which separates on standing, and according to the directions, should be shaken before dispensing. In this respect it differs from the preparations found on the market, which are perfect solutions.

The writer would offer the following as a substitute:

Chloroform	2 fl. oz.
Ether	½ fl. oz.
Tr. Cannabis Indica	2 fl. oz.
Tr. Capsicum	1 fl. oz.
Sulphate of Morphine	18 grs.
Oil of Peppermint	16 minims.
Hydrocyanic Acid Dil	1 fl. oz.
Glycerin	2 fl. oz.
Water	1 fl. oz.
Alcohol enough to make	16 fl. oz.

This forms a perfectly clear solution of about the same medicinal strength as those of the *N. F.* and *Br. Ph.* and more nearly resembles the commercial article.

The writer does not present the formula for use at this time, but with the hope that it will elicit a free expression of opinion that will be beneficial to the *N. F.* Committee.

*From the Proceedings of the Michigan Pharmaceutical Association.

Indigestion and Stomach Mixtures.*

Carlyle tells us that "man is a more or less imperfect digestive apparatus surrounded by clothes," and there is a good deal of truth in the remark, despite its cynicism. The perfect digestive apparatus is doubtless to be met with even in these present days, but the other thing is much more common, and among the ailing folk who seek relief in medicines it is almost invariable.

DYSPEPSIA'S VICTIMS.

Indigestion, or dyspepsia, is no respecter of classes. It affects each and every degree of mankind—and of womankind too, for that matter. Yet it has its own peculiar prey—the busiest of the workers and toilers in life—the men and the women who have no time to think what they shall eat or what they shall drink, who snatch a hurried meal when and where they can, and then rush back to counting-room or counter, to the ceaseless overstrain and mental worry of our *fin de siècle* life.

HOW TO AVOID DYSPEPSIA.

The stomach has its little ways, and when these are studied there is no trouble. Its duty is to ferment the food, but naturally it expects the food to be of a fermentable kind and properly divided, therefore we developed the faculty of knowing what is good for us, and teeth to chew the same with. Further, it likes a quiet time to do its work, and that is why we feel so little inclined for active exertion after eating. Also, being of an orderly disposition, it likes to finish whatever it has begun before starting on anything new, and abhors having things thrust upon it at odd times. Lastly, when

*From *The Chemist and Druggist.*

Chlorodyne and Similar Preparations.—By J. J. Wells and J. M. Klein.

Ingredients.	N. F. Mistura Chloroformi et Opii.	Br. Disp. Tinctura Chloroformi et Morphine.	Philadelphia Method.	Hungarian Phar. Chlorodyne.	London Chlorodyne.	Mattbie's Formula. Chloranodyne.	Chandler's Formula. Chlorodyne.	Page 266 Vol. XI, New Remedies. Chlorodyne.	Page 9, Vol. X, New Remedies. Chlorodyne.	Chlorodyne.	Chlorodyne, English Method.	Chlorodyne, Method.
Chloroform (Pure)	2 fl. oz.	2 fl. oz.	3 fl. oz.	2 fl. oz.	5 fl. dr	2 fl. oz.	1 fl. oz.	1 fl. oz.	6 fl. oz.	1½ fl. oz	1.5 fl. oz.	1½ fl. oz.
Oil Peppermint	16 min.	8 min.	32 min.	.....	96 gtt.	24 min.	32 min.	24 min.	12 min.	72 min.	15 gtts.	24 min.
Tr. Cannabis Indica	2 fl. oz.	.....	2 fl. oz.	ext.24 grs	.....	2 fl. oz.	1 fl. oz.	.....	ext.20 gr.	1½ fl. oz.	.....	1½ fl. oz.
Ext. Cannabis Indica	.....	.....	.....	.....	64 grs.	.....	.....	.....	.....	.....	.....	.....
Tr. Soap Bark (N. Fr.)	2 fl. oz.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fl. Ext. Belladonna	128 min.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tr. Opium Deod	2¾ fl. oz.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tr. Capsicum	1 fl. oz.	.....	oleoresin. 16 min.	.....	64 grs. oleoresin.	60 min.	64 min.	3 fl. oz.	½ fl. oz.	1½ fl. oz.	.....	.....
Ext. Licorice (Pure)	240 grs.	(liquid) 2 fl. oz.	.....	.....	.....	.....	.....	fl. ext. 1 fl. oz.	.....	.....	sr. 8 fl. oz, ex.46½ gr	.....
Water	½ fl. oz.	.....	1 fl. oz.	.....	.....	.....	.....	.....	.....	.....	.....	.....
Syrup	q. s. 16 fl. oz.	q. s. 16 fl. oz.	.....	.....	q.s. 16 oz.	.....	.....	.....	6 fl. oz.	8 fl. oz.	.....	.....
Ether	.....	4 fl. dr.	.....	.....	.....	.....	.....	¼ fl. oz.	.....	1½ oz.	½ fl. dr.	.....
Alcohol	.....	2 fl. oz.	8 fl. oz.	.....	.....	6 fl. oz.	5 fl. oz.	4 fl. oz.	1 fl. oz.	.....	90 per ct 4 fl. oz.	q. s. 16 fl. oz.
Morphine Hydrochlorate	.....	16 grs.	128 grs.	.....	.....	64 grs.	32 grs.	.....	25 grs.	72 grs.	125 grs.	46 grs.
Morphine Sulphate	.....	.....	.....	.....	32 grs.	.....	.....	20 grs.	.....	.....	.....	.....
Dilute Hydrocyanic Acid	.....	1 fl. oz.	U. S. P. 192 min.	.....	.....	4 fl. dr	.....	½ fl. oz.	¼ fl. oz.	2½fl. dr.	.....	2½ fl. oz.
Hydrochloric Acid	.....	.....	1 fl. oz.	.....	.....	.....	.....	.....	.....	¼ fl. oz.	.....	.....
Tr. Aromatic	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	tr. ar. & opm. sim. ½ fl. oz.	.....
Tr. Ginger	.....	.....	.....	6½ fl. oz	.....	.....	.....	.....	.....	.....	.....	.....
Tr. Aconite	.....	.....	.....	.....	.....	.....	.....	.....	.....	3½ fl.dr.	.....	.....
Tr. Hyoscyamus	.....	.....	.....	.....	.....	.....	.....	.....	.....	3½ fl.dr.	.....	.....
Tr. Cardamom (Comp'd)	.....	.....	.....	.....	.....	.....	.....	1 fl. oz.	.....	.....	.....	.....
Acetic Ether	.....	.....	.....	q. s. 16 fl. oz.	.....	.....	.....	.....	.....	.....	.....	.....
Chloric Ether	.....	.....	.....	.....	.....	.....	.....	.....	1 fl. oz.	.....	.....	.....
Oil Bitter Almond	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3 min.	.....
Oil Cherry Laurel	.....	.....	.....	.....	.....	.....	.....	.....	6 min.	.....	.....	.....
Syr. Orange Peel	.....	.....	.....	2½ fl. oz.	.....	.....	.....	.....	.....	.....	.....	.....
Glycerin	.....	.....	.....	.....	.....	q. s. 16 fl. oz.	q. s. 6½ fl. oz.	q. s. 16 fl. oz	.....	.....	.....	.....

it has finished the fermentation of the food, it empties itself and cries for more, producing the sensation of hunger, and then, and then only, ought another meal be taken.

HOW TO GET DYSPEPSIA.

The average man does none of these things. He gives his stomach a hard task, and never thinks of giving it fair play. In the morning he hurriedly crams himself, and then rushes to his business. At midday he does the same "only more so." Soon after, just when the stomach is trying its best, he swamps it with a small lake of afternoon tea. This certainly happens if "he" is a woman; if otherwise, he may keep things lively with "small drinks." In the evening comes his heaviest meal, taken when he is tired and when, as he is apt to forget, his stomach is tired also, and ought to be at the end of its day's work instead of beginning the hardest part of it.

WHAT DYSPEPSIA IS.

The result is that in time the stomach gets to be less and less able to do its duty. Digestion becomes a lengthy process, and before one meal can be disposed of, another is taken on the top of it. Endless confusion follows, for all the stages of fermentation have now to go on side by side. The stomach is never properly emptied, and, in consequence, it becomes a happy hunting-ground for all kinds of bacteria. These set up abnormal fermentations and produce acrid acids and gas. Proper digestion is now, of course, impossible, and the wretched overloaded stomach becomes blown out and dilated. As its walls are thinned and weakened, the distension goes on more easily and more rapidly till at length the final stage is reached, when the stomach is no longer a stomach, but only a big bag filled with all sorts of abominations.

THE SYMPTOMS OF DYSPEPSIA

are simply what might be expected from these conditions. First comes a sensation of heaviness and oppression after food. This gets worse as the overloading gets worse, and then, as the stomach is never empty, there is no hunger, and loss of appetite is complained of. So far the disease advances insidiously, and does not cause any great trouble, but whenever the abnormal fermentations are set up the sufferer finds that he has a stomach—one of the worst discoveries a man can make. Butyric acid is a bad enough thing to have in the stomach. Unfortunately, however, it does not stay there, but comes up into the mouth, and then its badness is beyond description. The gases also force their way up, so that between the heartburn and the eructation the "martyr to dyspepsia" begins to wonder whether he has been turned into a vinegar factory or a gaswork.

THE CURE OF DYSPEPSIA

is easy if it is taken early, but this is just when it seldom is taken. The chief danger, indeed, lies in the insidious slightness of the early symptoms, for the patient easily gets accustomed to them, and the precious time when a little regulation of living and of dieting would put matters right soon passes away. Only when the really urgent symptoms come on and life becomes a burden too grievous to be borne does he set himself to seek a cure. Commonly he now fails to find it. Still, even for the chronic martyr much can be done, and well-directed treatment, if it does not affect an absolute cure, will at least make life worth living.

HEARTBURN AND ITS TREATMENT.

Heartburn and acidity are the most distressing symptoms of dyspepsia, and it is generally to the cure of these that attention must first be directed. The usual treatment is to neutralize the fermenting acid contents of the stomach by means of an alkali. Bicarbonate of soda acts very well and at least half a tablespoonful of it ought to be given. This is often the most convenient plan, but it is far from being the best. It relieves the heartburn, but it does not relieve the stomach. Nature's way is to get rid of the offending mess by vomiting, and we may imitate her by given an emetic. The result is wonderful, and the patient feels in Paradise—for a time. There yet remains, however, a third method—that of stomach-washing. It ought always to be adopted where possible, for not only does it give immediate relief, but the relief is much more permanent than that attainable in any other way. By it the stomach is quietly and completely emptied without putting the patient to the trouble of vomiting. Moreover after it has been emptied the stomach can be washed and every septic organism swept from it, so that it is left clean and sweet and ready for its duty.

STOMACH WASHING.

As stomach-washing is not only useful in dyspepsia, but is also by far the most efficient method of treating cases of poisoning, it may be worth while to describe here exactly how it is done. All that is required is a soft thick-walled rubber tube about 6 feet long. To one end of this a large-sized glass funnel is firmly fixed. The other end is dipped in glycerin, and the patient is directed to swallow it. When the swallowing has commenced a little gentle pressure passes the tube on to the stomach, which it will have reached when rather less than half its length has disappeared. Some water is then poured into the funnel, and while it is yet full it is quickly depressed into a basin. The tube being now filled with water, and the funnel end being lower than the stomach end, a siphon action is established, and the stomach is repidly and easily emptied. When the flow has ceased a couple of pints of warm water ought to be poured into the stomach and likewise evacuated, and this should be repeated three or four times, so that everything may be thoroughly washed out.

Diagram to show—(*a*)The position of the tube when emptying the stomach; (*b*) When filling the stomach; (*c*) The opening of the larynx, past which the tube is carried by swallowing. When the patient cannot be induced to swallow, then the mouth must be opened and the point of the tube, as it is passed, must be pressed backwards against the posterior wall of the pharynx (*d*).

THE GENERAL TREATMENT OF INDIGESTION.

The general treatment is of immense importance, and without it the treatment by medicines cannot succeed. The diet especially should be carefully regulated, and only the lightest and most easily digested foods ought to be taken, and even of these only a moderate quantity at a time. The meals should be at regular intervals, should be eaten slowly, and a period of comparative rest should follow each. A large quantity of fluid must on no account be taken either with or between meals. Open-air exercise should be insisted upon, and, if possible, a holiday spent in a bracing atmosphere, and with plenty of pleasant out-door amusement.

MEDICINAL TREATMENT.

The remedies used in the medicinal treatment of indigestion may, for the sake of convenience, be divided into three groups—gastric sedatives, gastric adjuvants, and gastric tonics.

SEDATIVE MIXTURES.

In most cases of dyspepsia there is, as might be expected, a good deal of irritation of the lining mem-

brance of the stomach, manifested by a feeling of nausea and uneasiness or actual pain after food. In such cases the treatment is generally best begun by combating this irritation by means of a sedative mixture like the following:—

1. Acid. hydrocyan. dil. ..... ℥ ss
Liq. bismuth. et ammon. cit. ..... ℥ iss
Aq. chloroformi ad. ..... ℥ vj

Sig.: One tablespoonful three or four times daily before food.

2. Bismuth. subnit. ..... ℥ iv
Sod. bicarb. ..... ℥ iv
Pulv. tragacanth. co. ..... ℥ iv
Aq. menth. pip. ad. ..... ℥ vj

Sig. One tablespoonful three or four times daily before food.

3. Cocainæ hydrochlor. ..... gr. ij
Acid hydrocyan. dil. ..... ℥ ss
Syrup. aurantii. ..... ℥ vj
Aq. ad. ..... ℥ vj

Sig. One tablespoonful three or four times daily before food.

4. Liq. morph. hydrochlor. ..... ℥ ij
Ac. hydrocyan. dil. ..... ℥ ss
Aq. chloroformi ad. ..... ℥ vj

Sig. One tablespoonful three or four times daily.

GASTRIC ADJUVANTS.

As soon as the more urgent symptoms of irritation have disappeared the sedative should be replaced by a gastric adjuvant. This is simply to help the stomach with its work, to give it a relative rest during which it may return by the *vis medicatrix naturæ* to its normal and healthy state.

1. Glycerini pepsini ..... ℥ vj
Acid. hydrachlor. dil. ..... ℥ j
Syrup. aurantii. ..... ℥ vj
Aquam ad. ..... ℥ vj

Sig. One tablespoonful with food three or four times daily.

2. Pepsini. ..... ℥ ss
Extract. nucis-vomicæ. ..... gr. ij
Gingerini. ..... gr. ij
Glyc. tragacanth. ..... q. s
Fiat massa et divide in pilulas xxiv.

Sig. One or two with meals.

3. Papaini. ..... gr. v
Sacch. lactis. ..... gr. x
Fiat pulvis.

Sig. One to be taken with each meal.

GASTRIC TONICS.

It is by no means necessary to continue the use of adjuvants for a very lengthy period; in fact, it is far from desirable. They are never intended to permanently replace the gastric secretion, but only to supplement it for a time while the stomach recruits and gathers vitality and strength to do the work itself. Then the third variety—the gastric tonic—becomes useful to stimulate and tone up the stomach, and, let us hope, to complete and confirm the cure.

1. Acid. nitro-hydrochlor. dil. ..... ℥ j
Tinct. nucis vomicæ. ..... ℥ j
Tinct. cinchonæ co. ..... ℥ ss
Aq. ad. ..... ℥ vj

Sig. One tablespoonful thrice daily after food.

2. Liq. strychnin. hydrochlor. ..... ℥ j
Acid. hydrobroma dil. ..... ℥ ij
Tinct. aurantii. ..... ℥ iij
Aq. ad. ..... ℥ vj

Sig. One tablespoonful thrice daily after food.

Treatment of Diabetes.—Benzosol (benzoyl-guaiacol) in daily dose of 1-3 grammes (gr. xv-xiv.) is recommended highly in the treatment of diabetes Mellitus, by a recent writer in the London *Lancet*.

Notes, Queries and Answers.

Under this heading we will be pleased to answer the best of our ability all queries submitted relating to pharmacy and the allied servenses.

Liquid Dentifrices.—G. & C. M., Springfield, Ill.—Yes; there is always room for originality in the devising of formulas for tooth washes. W. H. Wearn, of Charlotte, N. C., sends us the following, for which originality is claimed:

Lavender Tooth Wash:

Tinct. krameria.
Tinct. lavender.
Tinct. myrrh, āā. ..... fl. ℥ i
Oil rose. ..... Mii
Menthol. ..... gr. xvi
Glycerin. ..... fl. ℥ ii
Tinct. white soap (20 per cent. hydro-alc.), enough to make. ..... Oi

Mix well, macerate during three days and filter.

Orris Tooth Wash:

Tinct. myrrh.
Tinct. orris (10 per cent.)
Tinct. cinchona, āā. ..... fl. ℥ i
Oil gaultheria. ..... fl ℥ ss
Glycerin. ..... fl. ℥ ii
Tinct. white soap (20 per cent. hydro-alc.), enough to make. ..... Oi

As above.

Carbolic Tooth Wash:

Tinct. cardamom comp.
Tinct. myrrh.
Tinct. vanilla, aa. ..... fl. ℥ i
Acid, carbolic. ..... Mxv
Glycerin. ..... fl. ℥ ii
Tinct. white soap (20 per cent. hydro-alc.), enough to make. ..... Oi

Witch hazel dentifrice:

Tinct. myrrh,
Tinct. orris, aa. ..... fl. ℥ i
Fld. extract witchhazel. ..... fl. ℥ ii
Oil cloves. ..... Mxii
Oil rose. ..... Mvi
Tinct. white soap (22 per cent. hydro-alc.), enough to make. ..... Oi

To Distinguish Poisonous from Edible Mushrooms.—B. F., Upper Montclair, N. J., writes for information as to the distinguishing points of difference between poisonous and esculent fungi.

Fungi (mushroom) may be classed as dangerous which have: (1) a cap very thin in proportion to the gills; (2) the stalk growing from one side of the cap (exception to this rule, the elm agaric, *agaricus ulmarius*); (3) the gills all of equal length; (4) a milky juice (exception the orange agaric, *Lactarius deliciosus*); (5) such as deliquesce, *i.e.*, run speedily into a dark watery fluid (exceptions to this rule *Coprinus comatus*, and *altramentarius*); (6) every one which has the collar surrounding the stalk filamentous, resembling a spider's web. A general rule, to which there are but few exceptions, is to avoid all fungi which have a decidedly acrid or unpleasant taste in the raw state.

Choride of Iron with Salicylate of Soda.—F. L. H., Los Angeles, Cal., has had a prescription for:

Tinct. ferri chlor. ..... fl. ℥ ii
Sodii salicylat. ..... ℥ iv
Liq. ammon. citrat. ..... fl. ℥ i
Olei gaultheriæ. ..... gtt. xx
Glycerin. ..... fl. ℥ ss
Aquæ. ..... ad. fl. ℥ iv

He wishes to know if the above can be compounded so as to form a clear solution. As prepared by our correspondent it forms a disagreeable iron-rust-colored mixture with a heavy dark precipitate.

It is evident from this that our correspondent has followed the old plan of adding the ingredients in the order in which they appear on the prescription. Tincture of iron chloride added directly to a solution

of sodium salicylate or *vice versa* will invariably result in the formation of an insoluble salicylate of iron which is frequently difficult to re-dissolve. A clear solution of a brilliant ruby-red color may be obtained by adding the tincture of iron chloride to the solution of ammonium citrate and adding to this the water and glycerin containing the salicylate of soda and oil of gautheria in solution.

Mosquitofuge.—E. F. E., Kissimee City, Fla.—We are not familiar with a mosquito compound bearing this name nor are we aware of a copyright having been secured for it. Formulas for mosquitofuges are plentiful enough, but it is difficult to select one which will produce an agreeable compound or prove pleasant in its application. Some of the formulas given below appeared in a previous number of this paper. No. 1 is regarded with favor by anglers, who, among sportsmen, suffer most on account of their proximity to water when plying their art; this is especially true of fresh water anglers.

NO. 1.

Olive oil	6 parts.
Oil of pennyroyal	4 parts.
Glycerin	2 parts.
Water of ammonia	1 part.

To be mixed and shaken before applying to the face and hands. Avoid getting the mixture in the eyes.

NO. 2.

Oil of tar.	
Olive oil, āā	℥ i
Oil of peppermint.	
Spirit of camphor.	
Glycerin, āā	℥ ss.
Carbolic acid	℥ ii.

Shake well together.

ANTI-MOSQUITO PASTILLES.

Charcoal	500 parts.
Nitrate of potash	80 parts.
Carbolic acid	40 parts.
Insect powder	250 parts.

Form into a paste with gum tragacanth and mold into pastilles.

Waterproof Solution for Paper.—F. H. C., Batavia.—The following suggestion given in a recent issue of the *Mineral Water Trade Review* seem to be quite practical and comparatively easy to carry out. Dissolve eight ounces of powdered alum; four ounces of castile soap, cut in slices in four pints of warm water; stir gently; do not beat to a froth. Now take two ounces of gum arabic and four ounces of French glue, and dissolve in four pints of warm water. Mix the two solutions, and when required for use, heat slightly, run into a flat dish or earthenware pan, dip the sheets of paper singly, and hang on lines to dry.

Treatment for Worms.—W. B., Ocala, Fla.—The following is recommended in Germany: Administer kamala or santonin with castor oil in appropriate doses. Give repeated injections of an infusion of genuine insect powder, (10 parts to 200 or 250) either with or without the addition of either vinegar, a sublimate solution, (0.03 to 200.) or of diluted chlorine water, and finally suppositories or ointments containing a little mercurial ointment.

Naphthaline in the form of keratin coated pills is said to be very efficacious in removing the small seat or pin worms. This should be administered continuously for some time to produce the desired effect. Decoction of quassia is used a good deal in domestic practice as a clyster in the presence of pin worms, as is also, particularly among the Germans, a decoction of garlic in milk.

To Exterminate Red Ants.—F. L. S., Flushing, L. I. In response to a correspondent of the *Scientific American* who desired information as to the best method of exterminating red ants from grass, Prof. C. V. Riley said that it is difficult to accomplish this without injury to the grass, but the use of bisulphide of carbon, which he had frequently recommended, only temporarily destroys the verdure of the grass plots immediately above the nests. It turns them yellow for a few days, but does not impair the vitality of the plant. The nests of the small red ant are very small, and it will probably suffice to pour a half teaspoonful or so of the bisulphide into the principal hole of the nest and destroy and cover up the sand-like mound. With the more extensive nests of larger ants, however, it will be desirable to pour a teaspoonful of liquid down each of the principal holes of the nests and cover them ten or fifteen minutes with a wet blanket, afterward exploding the vapor at the mouth of the holes with a torch of lighted kerosened rag at the end of a long pole.

Camphor Horse Balls—J. M. C., New York, N. Y. —The preparation commonly used is prepared after the following recipe:

Opium	30 grains
Camphor	60 grains
Aniseed, in fine powder	4 drams
Extract of licorice	a sufficiency

Reduce the camphor to a fine powder with the aid of alcohol; add the aniseed and opium and mass with soft extract of licorice.

The opium is omitted in certain cases.

Pomade for Dandruff.—B. G., Binghamton, N. Y., —The following formula, which was given in these columns last year, has given satisfaction in several cases reported on by readers:

Salicylic acid	30 grains
Powdered borax	15 grains
Peru balsam	24 minims
Oil of anise	5 minims
Oil of bergamot	15 minims
Vaseline	3 ounces

Cement for Rubber and Leather.—J. T. P., Brookline, Mass. The two following are deemed exceptionally good.

No. 1.

Carbon bisulphide	4 ozs.
India rubber in fine shreds	1 oz.
Isinglass	2 drms.
Gutta-percha	½ oz.

Put a thin coating of the solution on the parts, allow to dry, heat to melting, place the parts in close contact and hammer out all air bubbles.

No. 2.

Gutta percha	16 ozs.
India rubber	4 ozs.
Pitch	2 ozs.
Shellac	1 oz.
Linseed oil	2 ozs.

Mix together and melt by a gentle heat.

Ink Powder.—T. P. A. K., Bensonhurst.—A very satisfactory preparation is afforded by the following formula:

Tannic acid	50 grains
Dried sulphate of iron	20 grains
Dried sulphate of sodium	10 grains
Sugar	20 grains
Aniline blue	4 grains.

Reduce to a coarse powder and store in a well-stoppered bottle or air-tight tin box. When required for use add the above ingredients to one quart of boiling rain-water, and stir until everything is dissolved. When cold the ink may be put up in suitable sized bottles. This ink writes with a bluish color, but turns black rapidly.

Test for Lanoline.—W. J. Q., New York City.—The most characteristic and delicate test for the detection of lanoline in the presence of other fatty bases is Lieberman's cholesterol reaction which produces a

bright green color when sulphuric acid is added drop by drop to a solution of 1 gramme of lanoline in 3 c.c. of anhydrous acetic acid providing that no impurities are present to mar the color.

MISCELLANEOUS FORMULAS.

Cheap Perfumes.

VERBENA.

Oil lemongrass	fl ℥ iii
Oil lemon	fl ℥ iv
Oil orange	mxxx
Alcohol enough to make	fl ℥ xvi M.

Macerate for four weeks and filter for use.

ROSE GERANIUM.

Oil rose geranium	fl ʒ i
Alcohol	fl ℥ xv M.

PATCHOULY.

Oil patchouly	fl ʒ i
Essence rose geranium	fl ℥ iv
Alcohol	fl ℥ xv M

BRILLIANTINE.

(*Ch. and Dr.*)

1.	Oil of sweet almonds	8 oz.
	Alcohol	4 oz.
	Glycerin	1 oz.
	Oil rose geranium	12 drops
2.	Castor oil	6 parts
	Venetian soap	2 parts
	Benzoin	2 parts
	Alcohol	200 parts
	Otto of rose or oil of neroli	a sufficiency
3.	Glycerin	10 parts
	Alcohol	100 parts
	Rose water	100 parts
4.	Castor oil	6 parts
	Glycerin	6 parts
	Benzoin	2 parts
	Alcohol	200 parts
	Perfume	a sufficiency

Sachet Powders.

HELIOTROPE.

Orris root in No. 30 powder	4 ozs. troy
Rose leaves rubbed	2 ozs. troy
Powdered vanilla	2 drms.
Powdered Tonka	2 drms
Essential oil of almond	3 minims
Heliotropine	20 grs.
Alcohol	q. s.
Powdered Starch	2 ozs.

Dissolve the heliotropine in half an ounce of alcohol, add the oil of almond, and pour on the orris root. Finally add the other ingredients, and mix thoroughly.

POTPOURRI.

Musk	10 grains
Otto of rose	10 drops
Oil lavender	15 drops
Oil lemon	30 drops
Oil bergamot	30 drops
Mace	2 drams
Tonka beans	Four
Cloves	½ ounce
Benzoin	½ ounce
Orris root	3 ounces
Yellow sandal wood	3 ounces

Reduce all the solid ingredients to a coarse powder; mix and preserve in a stoppered bottle.

LAVENDER.

(*Br. and Col. Druggist.*)

Lavender flowers	8 ounces
Dried thyme	4 drams
Dried mint	2 drams
Cloves	2 drams
Oil lavender	½ fl. drachm
Tincture ambergris	1 fl. drachm

Formulas for Transfusion Fluids.

Luton of Rheims, was one of the first to practice what he calls hypodermatic transfusion the technique of which is described in an article which appeared in 1889 in the *Arehives Générales de Médecine.* The serum which he uses has the following formula:

Crystallized phosphate of soda	5 parts
Sulphate of soda	10 parts
Distilled water	100 parts

Boil, sterilize and filter.

I may remind you, apropos of this hypodermatic transfusion, that this method has been taken up by Cantani in the treatment of cholera under the name of dermoclysis. It consists in injecting into the cellular tissue large quantities of water containing chloride of sodium in solution. The principle is the same as that of the intravenous injections of Hayem. Hayem's formula is as follows :

Chloride of sodium	5 parts
Sulphate of soda	10 parts
Distilled water	1000 parts

Chéron has proposed another formula, which resembles the foregoing; it contains in addition a little phenic acid.

Sulphate of soda	8 parts
Phosphate of soda	4 parts
Chloride of sodium	2 parts
Carbolic acid (crystals)	1 part
Sterilized water	100 parts

Huchard has modified this formula as follows :

Phosphate of soda	10 parts
Chloride of sodium	5 parts
Sulphate of soda	2.50 parts
Carbolic acid (crystallized)	1 parts
Sterilized water	100 parts

Of this solution from 5 to 10 grammes (ʒ iijss) are injected under the skin. Along with these injections of artificial serum I must mention those that have glycerin for basis.

Hallipré and Tariel have maintained that solutions of glycerin, when injected, have the same effect as Brown-Séquard's testicular liquid and they have proposed the following formula :

Neutral glycerin	10 parts
Boiled water	30 parts

They inject twice a week 4 grammes (ʒ j) or this liquid diluted with half as much boiled water.

Under the name of "Vitaline" much use is made in Russia of a preparation which is simply a solution of boric acid in glycerin. According to an analysis made in the municipal laboratory, the composition of vitaline is as follows :

Borax	38 parts
Pure glycerin (density 1.26)	42 parts
Water	40 parts

Russian physicians give internally 30 drops three times a day of this solution, or make a solution of 2 to 10 per cent. of this vitaline in sterilized water and practice hypodermatic injections of one cubic centimeter two or three times a day. The same solution is used in vaginal or urethral injections.—DUJARDIN-BEAUMETZ in *Medical Age.*

Bibliography.

ODOROGRAPHIA. A Natural History of Raw Materials and Drugs used in the Perfume Industry. Illustrated. By J. Ch. Sawer, F. L. S., London. Guerney & Jackson, Paternoster Row, 1892.

What Flückiger and Hanbury have done for materia medica in "Pharmacographia" is done in the present volume by Mr. Sawer for perfumery.

The introductory chapter opens with an interesting disquisition on the sense of smell, which is followed by a rather discursive though very readable mention of some of the more noteworthy of the various plants which have odors resembling those arising from entirely dissimilar sources,—such as the *Astragalus caprinus* a perennial legumninous plant of Barbary having the smell of goats, the leaves of *Spiræa Ulmaria* that of carbolic acid, the *Anagyris fœtida,* a leguminous tree found on the northern shores of the Mediterranean having the odor of human excrement. The singular

attraction, or in some cases repulsion, which certain odors possess for particular animals is noted though in a merely cursory way the limitations of space forbidding any digression into a consideration of the underlying cause and meaning of these likes and dislikes.

"Dogs take great delight in smelling the *Chenopodium vulvaria;* they roll on it, and the fœtid odor exhaled by the plant excites them to such an extent as to provoke urinary excretion." The author does not refer as might be natural in this connection, to the fondness of dogs for rolling in carrion, a fondness recognized and deplored by every sportsman.

The bulk of the volume is devoted to a study of the various odoriferous substances of commerce these substances being arranged in relation to their odor, for instance geranium, ginger grass, etc., follow the rose and are treated of under the head "perfumes somewhat resembling the rose."

Detailed accounts are given of the method of cultivating, harvesting and preparing the materials used in perfumery, as are also abstracts of patent specifications relating to the perfumers' art.

The work is not merely a compilation of previously published data, though the scattered literature of the subject has been freely drawn upon, but embraces information obtained at first hands from those engaged in the culture of odorous plants in various parts of the world.

The practical value of the book lies in its description of the physical and chemical properties of pure products so as to aid the consumer in estimating the value of the commercial articles.

No attempt is made to produce a hand book for perfumers or a guide to the manufacture of perfumes, as the materials alone are dealt with, but the book is one which no perfumer should be without, while it will prove of much interest to every pharmacist who pays any attention to the art of perfumery.

VETERINARY MEDICINES, their actions and uses. By Finlay Dun. 8th edition, revised and enlarged (almost entirely rewritten.) 776 pages, 8vo, cloth, $5. New York: William R. Jenkins.

The increased bulk of the present volume results from the introduction of the recently discovered antiseptics and antipyretics of the benzol series, and other new remedies; from details of various British and foreign experiments made with alkaloids and other medicines; and from fuller and more systematic treatment of the actions of various important drugs. Careful revision has been made of the matter relating to the actions of the several domesticated animals, the curative uses, doses, and medical forms. The Index of Diseases and Remedies has been considerably enlarged, and an endeavor has been made to indicate the nature of each disease, the conditions which dictate the use of particular remedies, and the manner in which they relieve or cure.

PAINTERS' COLORS, OILS AND VARNISHES: A Practical Manual. By Geo. H. Hunt, F.C.S., Member of the Society of Chemical Industry, Lecturer on Technology of Painters' Colors, etc., Manchester. With numerous illustrations. London: Charles Griffin & Co., Limited. Philadelphia: J. B. Lippincott Co.

Probably no other chemical industry, or industry in which chemistry plays so important a part, has been so long and so generally conducted on a "rule-of-thumb" basis as has the making of paints and varnishes. The work of the author, therefore, combining as it does a practical knowledge of the methods pursued and a scientific comprehension of the significance, is a most valuable one.

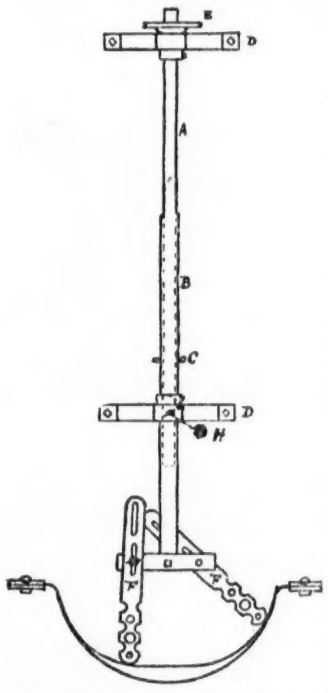
New Inventions and Novelties.

Under this heading we will be pleased to insert, free of charge, a description and illustration of novelties and new inventions of interest to the drug trade.

A Simple Mechanical Stirrer for Open Steam Pans.*

By JOHN MOSS.

I have been asked by engineers and manufacturers on several occasions to allow inspection of the mechanical stirrer used by my firm they having views of either copying it or improving upon it. One such request recently made has suggested that the matter is of fairly general interest, and would not be otherwise than acceptable to the readers of the *Pharmaceutical Journal.* There is no lack of such appliances, and their variety is almost as great as their number. Each designer relies upon his own experience and mechanical skill, modified by the views of the artificer who carries out the job.



MECHANICAL STIRRER. SCALE, HALF AN INCH TO THE FOOT.

The merits of the one now described are briefly that it is simple, inexpensive and effective.

It consists mainly of a 1¼-inch shaft "A" and a hollow shaft "B" which slides easily over it. These can be geared together by a pin "C" fitting into a hole which passes through both shafts from side to side. The shafts are held vertically over the center of the pan by means of wall brackets "D." The upper end of "A" carries an 11-inch grooved pulley "E," round which passes the gut-band bringing the turning power; the boss of the pulley works directly on the brass journals of the upper wall bracket. A collar with set-screw below the journals prevents any upward movement of "A." On the lower end of "B" two blocks of hard-wood (birch) hollowed to receive the shaft are bolted to each other through it; at each end of the double block is a bolt with sunken head, projecting 2 inches through; the projecting bolts carry the paddles "F," which are provided with slots to receive them, and quick turning winged nuts enable the paddles to be held at any angle from horizontal to vertical. It will be noticed in the plan that the paddles are fitted on opposite sides of the block. "B" is provided with a collar and set-screw, the collar being so fixed that "B" may fall to the precise point at which it is to work; this brings the holes in the two shafts into correspondence.

The paddles "F" are made of hard wood (ash by preference), and besides the slots previously mentioned, the blade, or part which works in the liquor, is perforated with holes of different sizes, not less than

* From *The Pharmaceutical Journal and Transactions.*

one inch in diameter; it is also scolloped round the edges. If the blade were entire, after a few revolutions the contents of the pan would move round as a solid mass, there being none of that breaking up into currents of different sizes, moving at different speeds, which is the very essence of successful stirring. The blades for a pan 36 inches across by 12 inches deep measure 24 inches by 2½ inches by ⅝ inch, and are of course subject to variation both in size and shape.

Where several stirrers are at work it is obviously an advantage to be able to throw one out of gear without disturbing the remainder; this can be done while in full revolution by withdrawing the pin "C." The lower part of the apparatus can be raised so as to be two feet clear above the edge of the pan, and is held in that position by a single turn of a thumb-screw "H," operating through the front journal of the lower bracket. A small steam engine about half-horse power works a number of the apparatus. A good speed for thin liquors, which should not reach within four inches of the top of the pan, is 24 revolutions of the stirrers per minute; as the liquor becomes of greater consistency the speed may be increased even to 48.

A section of a pan is shown, with a plan of the stirrer, the drawing having been made by my pupil, Mr. Noel C. Jones.

New Hydrogen Sulphide Apparatus.*

By G. A. Goyder.

A modified form of hydrogen sulphide apparatus has been fitted up, both in the assay and students' laboratory, and as it has been found to work very economically, and with less trouble than those previously in use, and with a minimum of smell, a description of it is appended.

CONSTRUCTION.

The construction of the apparatus may be readily seen from Fig. 1. The stopper in A should fit loosely. The tap *a* may be replaced by a pinchcock. The valve *b* may be made by bending a ten cc. or fifteen cc. pipette, and it is joined to *a* by a piece of rather stout India rubber tubing, the ends being tightly tied over the glass. This remark applies to all the india-rubber tube connections used. The lower end of *b* is drawn out, as at *c*, so that only a very thin stream of acid can run through it. *b* is fixed in the neck of B by means of a short india-rubber stopper.

B is most conveniently made from a Woulff's bottle, with three necks at the top and one neck near the bottom (a bottle with two necks at the top only may, however, be used, by having an india-rubber stopper perforated with three holes, through which pass *b f*, and a siphon reaching to the bottom instead of the tap *d*. See I). A bottle three feet high by about five inches in diameter, as shown by the dotted line, would be much preferable to the one used, which is about seven inches high by five inches in diameter, but the former is not at present procurable.

e, the middle neck of B, is used for inserting the iron sulphide, and should be easily accessible and fitted with an india-rubber stopper tied down.

The third neck of B is fitted with a tube, as shown at H, enlarged. This may be done by drawing out a glass tube to a capillary and sealing the end; the bulb *h* is then blown out; the tube is then heated at *g* over the blowpipe flame, while blowing into the other end of the tube until a hole is made, the edges of which are flattened down by the blowpipe; the sealed end is then cut off, leaving a small opening. *f* is fitted into the neck of B by means of an india-rubber cork pressed down about half an inch, and the cup thus formed filled with melted pitch. The same method is used for the other necks fitted with tubes, and in case of a breakage the stoppers can be removed after warming the neck carefully with a Bunsen flame.

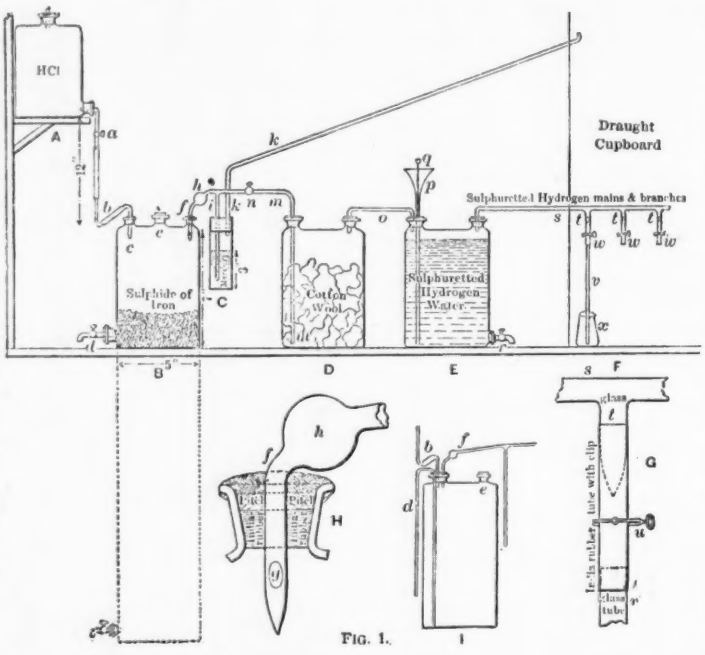


FIG. 1.

The funnel *p* in E is kept closed by a glass rod tipped with india-rubber tubing.

The hydrogen sulphide branch pipes for students are made by joining glass T pieces, as seen enlarged at G. The down pipe *t* is drawn out to a thick capillary and cut off, and the size of the capillary adjusted by blowing through the other end of the tube, after fitting a glass tube to it with india-rubber tubing, until only a slow stream of air passes when blowing with moderate pressure.

The arrangement of the different bottles can of course be modified by varying the lengths of the connecting tubes to suit the space available.

In setting up the apparatus care should be taken that fresh acid may be poured into A, fresh iron sulphide put into B, more water poured into E, and spent acid drawn off through *d*, without disconnecting any of the parts or moving any of the bottles.

A is filled with dilute hydrochloric acid (1 : 1).

b. As much mercury is put in *b* as will fill at least four inches of the upright tube.

B. Some small marbles are placed at the bottom of B to prevent *d* being choked by iron sulphide, and the rest of the bottle is filled with iron sulphide.

C contains three inches of mercury.

D is filled with cotton wool.

E is filled with distilled water.

The bulb *h* in *f* is not essential.

Taps may be used instead of the clips at *tt'*.

ACTION.

The apparatus being set up as described, the tap *n* being closed, on opening the tap *a* the acid flows

* From the Report of the South Australian School of Mines and Industries and Technological Museum, through *Am. jour. A. and A. Chem.*

gently into B through *b*, and hydrogen sulphide is generated. As soon as the pressure rises in B the mercury in *b* is driven back and stops the flow of acid. Should much acid have entered B the pressure may increase until the mercury is depressed to the bottom of *i* in C, when some gas escapes through *k* into the draught cupboard. On opening *n* the gas passes through *g* into *f;* thence through D into E, where it is slowly absorbed by the water, which soon becomes saturated. The beaker of solution *x* is then connected with *t* by the tube *v*, and the clip on *w* opened, when a slow and regular current of hydrogen sulphide passes until the clip is again replaced on *w*. Similar beakers may of course be attached to *t'*, *t''*, etc.

Hydrogen sulphide water may be drawn from E by *r* as required.

Fresh acid is poured into A as required.

The iron sulphide in B should be replaced, before it gets low, through *e*, *a* being turned off meanwhile.

More water may be added to E through the funnel *p*, the tap *n* being turned off before taking out plug *q*.

The tap *a* can be left open, except when putting iron sulphide into B; and the tap *n* need only be closed when the apparatus is not required, as the large size of D and the water in E in a great measure prevent the blow off of hydrogen sulphide through *k* when a rapid supply of gas is suddenly stopped.

The mercury in the valve *b* remains quite clear and bright; that in the safety blow off tube *c* has become a little blackened after six months' use, but its action is quite unimpaired.

The hydrogen sulphide water in E keeps quite clear and bright, and free from any trace of iron.

The tube *f* has proved very effectual in preventing the passage of any liquid with the gas, even when the evolution of gas is very rapid. A similar plan has been tried in distilling off the alkaline liquid from a Kjeldahl determination of nitrogen, the end of the tin condenser being drawn out to about three-sixteenths of an inch inside diameter, and a slot cut at *g* (as in H). There was, however, no bulb at *h*. In working this it was found that the tip at the bottom was always closed by a drop of water, and all the vapor passed through *g* into the condenser. The distillate from a strongly alkaline solution, kept rapidly boiling, in a test experiment was quite neutral.

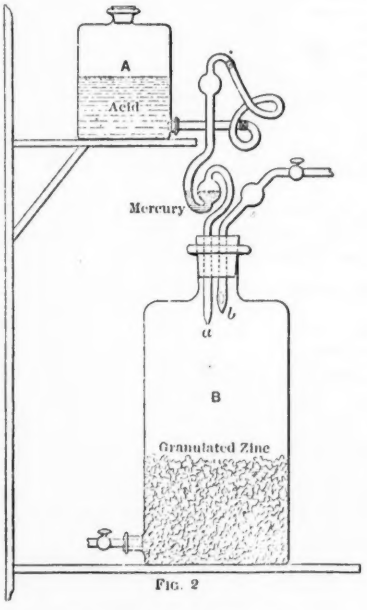
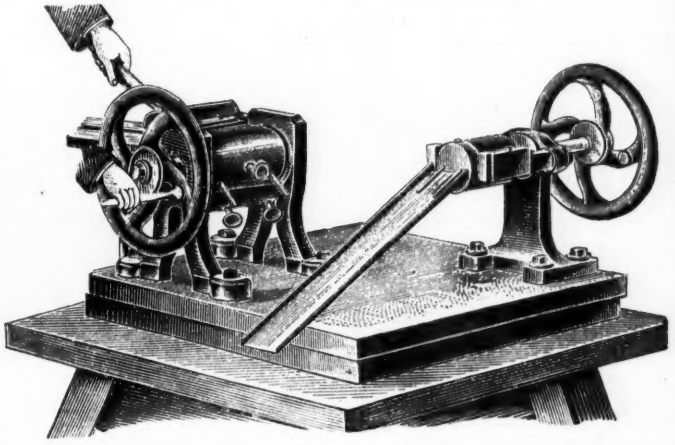


FIG. 2

A modified form of this apparatus has also been tried for generating hydrogen and carbonic acid gas when a constant supply was required for some time, and it was found that the supply could be regulated much more accurately than with the apparatus generally used. Fig. 2 illustrates this apparatus, which requires no further description except that it is well to have the bottle B long and narrow and A short and wide, and the tip of the tube *a* should be below the tip *b*. The bottle A can, of course, be raised or lowered as required, being connected to B by india-rubber tubing.

A Mechanical Pill Machine.

This machine is in two parts, one of which is an apparatus for making the mass, while the other divides the mass and forms it into pill form. By a special construction uniformity in the size of the pills is insured. The machine will turn out from 30 to 36 small



pills at one time, or a proportionately smaller number of larger pills, its daily capacity being 150,000 pills. It is spoken of quite favorably in the Berlin *Pharmaceutische Zeitung*. It is made by the firm of Fitz Kilian, in Berlin, and designated as the "Unicum" Pill Machine. The price in Germany is about 75 marks.

A Rapid Filtration Apparatus for Agar-Agar and Gelatine.—Dr. J.M.Byron exhibited an apparatus which he had devised for the purpose of facilitating the troublesome process of filtering agar-agar and gelatine at a recent meeting of the New York Pathologocal society which is described in the *Medical Record* as follows: It consists of two concentric brass cylinders placed the one within the other so as to form between them a steam jacket. This space communicates with the interior of the inner cylinder only by means of several holes at the upper part. When it is desired to filter agar-agar, a brass tube, having a sieve at the bottom to strain out the coarse impurities, is screwed into the cover of the inner cylinder, and it is long enough to dip down into the solution to be filtered, which is contained in this inner cylinder. This brass tube is filled with animal charcoal, and the filtered liquid, as it escapes from the top of this tube, is conducted away into any desired receptacle. The outer cylinder is provided with a safety-valve, and with a funnel and stop cock. Water is poured through the funnel into the outer cylinder and is there heated to boiling, the steam escaping through the open stop-cock and funnel. When it is desired to filter the liquid in the inner cylinder the stop-cock is closed, and then the pressure of the steam forces the fluid through the tube containing the filtering material and out by the central tube. If desired, a Pasteur filter may be substituted for the central tube containing the animal charcoal.

Written for the American Druggist and Pharmaceutical Record.

TIPS ON ADVERTISING. VIII.

The Use of Circulars.

By Ralph Gable,

Of Salem N. J., winner of the $20.00 prize for circular in the American Druggist advertising competition.

The conclusion deducible from the face of the majority of druggist "ads." that the aforesaid druggists were the slowest class of merchants living was what induced me to study the subject of advertising. There's a sentence that will evoke an indignant flash from many eyes that scan it!

In explanation; I do not say that I thought that druggists were slow, but simply that their advertisements implied such a fact. Of course I did not have the remotest idea that I could revolutionize the advertising methods of the fraternity, but I felt sure that with a little special effort, keeping shy of old ruts, avoiding "pure and reliable drugs" and eschewing "Prescriptions compounded at all hours," as the burden of my lay, it would primarily benefit the store with which I was connected, secondly, advance my own interests as a clerk, and lastly give me a training which would be beneficial to me when I displayed to the world a sign bearing the words "Gable, Pharmacist."

So much for the causes which impelled me to take up the subject of advertising. I might add that my judgement of druggists "ads" was not based on a few familiar home advertisements. Having access to the "exchanges" of a daily newspaper of which an older brother was editor, I invariably looked over the advertising of druggists.

I first saw the importance of circulars and circularizing when I assumed the management of the "Reading Pharmacy," as it was dubbed from the fact that the owner was not a registered pharmacist, in the Summer of 1889. I advertised in three daily papers but in addition used circulars in the following way. When the city was treated to the visit of a circus, honored with a convention of any sort, or enlivened by a parade, in short anything that drew the people out, I observed the opportunity and had circulars given to passersby at some point within a square of the store. The gist of the advertisement depended on the season—soda water, a cough or hair preparation or tooth wash. Casual reference would be made to prescriptions or some seasonable article, but the circular treated mainly of one topic.

Aside from the question of direct returns I found it added to the prestige of the store and after all that is the principal point. One likes to see a fair direct return from a circular, but the acquisition of new patrons is of course more valuable than a sale of a certain article to a person who wants just that article. Here is where tact, salesmanship comes in. Anyone can learn to take a package from a shelf or case, wrap it and thank a patron in a perfunctory manner, but when a customer comes in response to an advertisement especial pains should be taken. Without being servile or effusive make such an impression on him that he will come again.

In the Autumn of 1890 I entered the store of W. Henry Dunn in Salem, N. J. I stumbled into my element so to speak, for I found him to be a believer in liberal, judicious advertising. I use the term "judicious" because I have known druggists who advertise liberally by circular but who have the matter distributed so poorly or at such inopportune times that it was practically a waste of money.

The original was without the cut.

William C. Alpers,

Pharmacist, *Bayonne, N. J., April 25, 1893.*

To our Friends and the Public in General:

WE beg leave to announce That we are moving from our old quarters into our new house across the street, and invite you cordially to come and see our new Pharmacy.

Moving makes many changes in a house. Old things are thrown away, new things take their places. In a new house everything must be neat, nice and clean. There is no room for shabby furniture, no room for shop-worn goods. Just imagine: "Old medicines, stale tinctures, moldy powders!" Would you patronize a druggist whose bottles are dirty, whose goods are dusty? Our principle has always been: "Only the best and cleanest is good enough for our customers." We are proud of our customers, we want them to be proud of us. Therefore, away with old things!

But there are some old things That are worth moving into a new house. There are old customers. There is old friendship. There is old confidence. There is old energy.

All these we intend to keep. To our old customers we expect to add new ones. We will cherish and preserve their old friendship, and strengthen their old confidence by new efforts. Our old energy must go with us to help us carry the new burden and make the new store a success—indeed it is a part of ourselves to such an extent that we could not leave it behind even if we wished to do so.

Thus we move, Trusting that honesty, perseverance and ability are a good foundation for a new home.

Come and see us in our new Pharmacy.

Very truly yours,

William C. Alpers.

We have circulars written on liver pills, headache powders, cough balsam, corn killer, etc., etc. We generally have them printed in large numbers—that is, we take six or eight specialties and have five thousand on each topic struck off. This lessens cost and we have them on hand at any time. These circulars are distributed at intervals of four or six weeks.

Generalities in a circular do not pay. A circular should deal with one article or a line of articles closely related. Be specific and honest. A circular should be couched in good language, but palpable exaggeration never begets confidence. There are thousands of druggists all over this broad land who pride themselves on specialties—a tooth wash as fine as Sozodont, a Sarsaparilla as peculiar as Hood's, a liniment as good as St. Jacob's Oil. No doubt its true, but it should be remembered that advertising and not actual virtue has made those names powerful.

Photography as a Means for Advertising.

By W. H. Hostelly,

Of Philadelphia, Pa.

My article in the April 21st number of The American Druggist and Pharmaceutical Record, entitled "Tips on Advertising," has called forth a number of comments, and has been freely copied. While the references to this paper have mostly been of a complimentary nature, there is one conspicuous exception to this, consisting of a criticism published in a London

(Eng.) photographers' journal, *Photographic Work*. And as this criticism is of a peculiar not to say humorous nature, I feel called upon to make a brief reply to the same. The remarks referred to take the shape of a regular article which is headed: "Photography and Advertising." I copy:

The AMERICAN DRUGGIST has an article in which the reader—who is supposed to be a pharmacist—is advised how to increase his business by the agency of the camera; and the advice—such as it is—is equally applicable to any other business. We epitomize it as follows:

Then follows quite a lengthy excerpt from my paper, sufficient to give their readers the salient features. After thus complimenting the AMERICAN DRUGGIST and myself by giving so much of their space, which seems to be limited, to quoting my paper, they take occasion to comment as follows:

The above is a fair sample of a great deal more. We are inclined, however, to think that the public might rather avoid than seek the establishment of "Mr. Jones, the pharmacist," or of any other tradesman, as a result of such considerable and public photographic activity as is recommended, as those going to a shop generally like to meet the principal, especially when the somewhat delicate work of the pharmacist is involved; and such an active photographer as is pictured would have but little time for other work.

We don't like the plan of quoting proverbs in emphasis of opinions, but the view *ne sutor supra crepiaam* is so deeply rooted that we feel sure any ordinary business would suffer by such a course as is recommended by the writer in the AMERICAN DRUGGIST. The photographer, however, may well act on the hint.

LITTLE PELLETS HAVE BIG EFFECTS.

Many people nowadays believe in Homœopathic remedies. The little pills certainly have some advantages—they are compact and easy to take.

These remedies include many specifics for common complaints that are largely used.

Many people keep aconite pills at hand to take when any symptoms of a cold appear. They are handy to carry, handy to take, always ready, and we keep them.

JOHN SMITH & CO.,
Druggists.

Designed by RALPH GABLE of Salem, N. J.

In reference to the scheme proposed occupying so much time that little would be left for devoting to business, I would say, that an average of one hour a day away from the shop would keep the druggist abundantly supplied with fresh views; he could then turn them over to some one else for developing or develop them himself at leisure. The idea is not to make a business of photography—not at all, but merely to use it as a means to an end—to extend the trade.

The very fact that my London critic has given my article such publicity in his journal appears to me to be evidence that he considers the scheme a good one, though good only for his own family, the photographers. In this connection I am reminded of a little girl and her brother observed the other day. Sister was holding a banana in her hand contemplating its mellowy appearance with undisguised pleasure, when in an instant her brother ran up and seizing the partly peeled fruit proceeded to devour it, calling out by way of consolation: "Bananas are not good for little girls only good for boys. If you were to eat this you'd get sick." No, Mr. Editor of *Photographic Work*, we know what is good for us and if the same is good for you, all right, you are welcome; but it looks as if you were trying to convince us that the druggists' interests would suffer by the scheme proposed, so that your photographic readers might have a monopoly of it. Druggists are not likely to be blinded by such gauzy persuasion. We rise just as early on this side of the water as you do in England—*diluculo surgere saluberrimum, est.*

In Hot Weather Keep Cool.

When such weather as the present hot spell prevails we all should be cautious, not to overwork, not to overeat, not to get excited, and to keep the body cool.

See that the skin, stomach and bowels perform their functions, and eat sparingly of cooling foods.

Look out for the first symptom of disorder, and consult your physician or come to us.

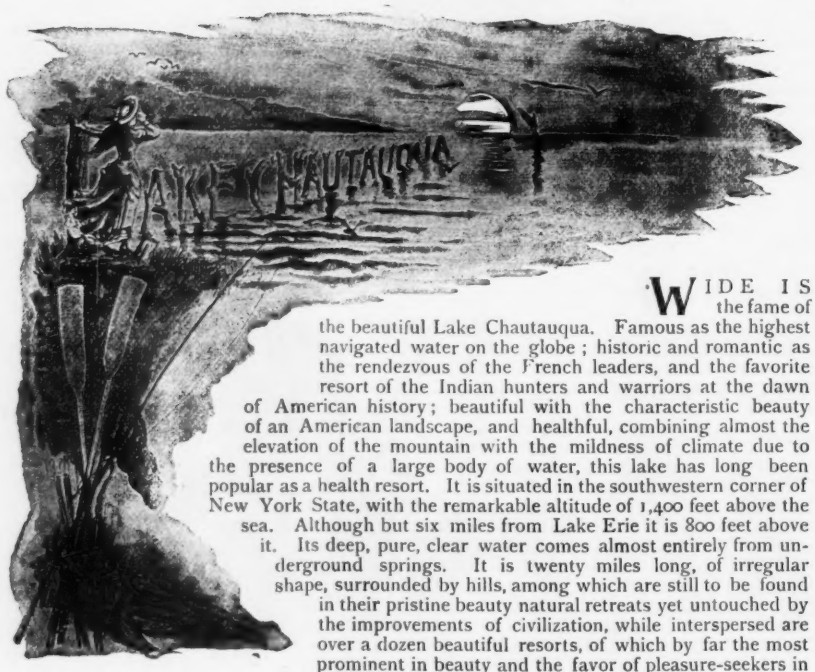
If you wish a prescription filled we will compound it with care from drugs of the highest quality.

JOHN SMITH & CO.,
Druggists.

Designed by RALPH GABLE of Salem, N. J.

In reference to the proverb you quoted in support of your views, let me say that if taken in the literal sense in which Appelles used it, I will agree with you, not however in the figurative sense, which you doubtless had in mind. Business is not now done as it was in ancient times, at least not in progressive, prosperous, pushing America. We "get there" by *making* things go, and use every legitimate means in furthering our business interests. You know the clam also has a proverb, in keeping with the one you quoted: *More majoram, more majoram, more majoram*, is his mournful cry. We are not clam-like, however, and can't afford to be, now can we, Mr. Editor?

Electrotypes of the illustrations in this series of articles will be together with one years subscription for $1.50. This offer applies only to new subscribers or to those paying up all arrears.



WIDE IS the fame of the beautiful Lake Chautauqua. Famous as the highest navigated water on the globe; historic and romantic as the rendezvous of the French leaders, and the favorite resort of the Indian hunters and warriors at the dawn of American history; beautiful with the characteristic beauty of an American landscape, and healthful, combining almost the elevation of the mountain with the mildness of climate due to the presence of a large body of water, this lake has long been popular as a health resort. It is situated in the southwestern corner of New York State, with the remarkable altitude of 1,400 feet above the sea. Although but six miles from Lake Erie it is 800 feet above it. Its deep, pure, clear water comes almost entirely from underground springs. It is twenty miles long, of irregular shape, surrounded by hills, among which are still to be found in their pristine beauty natural retreats yet untouched by the improvements of civilization, while interspersed are over a dozen beautiful resorts, of which by far the most prominent in beauty and the favor of pleasure-seekers in Lakewood.

Lakewood is to-day one of the most fashionable resorts of this continent, and is frequently called the social center. Those not acquainted with the resorts on Chautauqua labor many times under the impression that a literary point is its chief attraction; and while it is probably the home of the grandest literary organization in the world, it is also represented by Lakewood as the fashionable and social center, and the new Kent House, besides being entirely new and modern, is by far the finest and best hotel resort on the lake, and equal to any in the North.

It is this charming locality which has been selected for the meeting of the New York State Pharmaceutical Association, and it is confidently expected that a large number of pharmacists of this and neighboring States will take part in the proceedings.

The new Kent House, where quarters have been secured for the meeting, is five stories high, with basement and attic; has a handsome sea-green Vermont slate roof, from which rises a grand observatory tower 150 feet high, and from which 200 people can at once obtain a superb view of the lake and surrounding region. The building sits high and dry on a foundation wall of heavy stone masonry.

It has no continuous verandas to destroy the privacy of the rooms; but the verandas are arranged in four tiers on the east and west, north and south sides of the building. The combined area thus obtained—over 15,000 square feet—is ample for all ordinary uses, the symmetry of the hotel is retained, and the strict privacy and quiet of the several rooms are assured.

A large green-house has been built on New York avenue, near the Musicians' Cottage, where a fine collection of cut flowers, tropical plants and floral decorations may be seen.

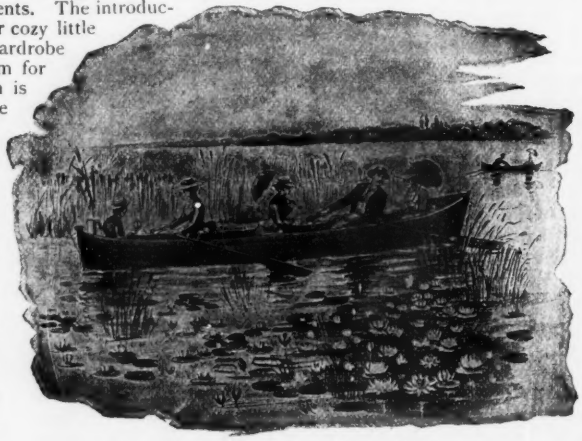
The rooms are, on an average large, and by an ingenious arrangement the guests are allowed quite a wide latitude for choice in the make-up of their apartments. The introduction of a large number of alcove bedrooms gives opportunities for cozy little parlors if desired; also the chance of having large storage and wardrobe capacity, without the additional expense of taking an entire room for that purpose, as is often necessitated at resort hotels. Each room is lighted by gas, has the regular electric bell connection, with the return call attachment for communicating with separate rooms, and is connected with the general fire alarm, by which every person in the house can be warned of danger at the same instant. Each sleeping-room has a burglar-proof lock on the door.

Lawn tennis courts have been laid out on the lake front, near the former location of the casino. These courts are laid in a bed of clay, with high wire back stops, and thoroughly shaded by trees, furnishing a cool and shady resort for the lookers-on, as well as the players. Players should carry their own racquets with them.

The fishing is said to be excellent, the best in fact to be had east of the Rocky Mountains.

All these attractions will be enchanced and added to by the excellent programme for the entertainment of the members and their friends, which has been provided by the efficient committee of arrangements. A large number have signified their intention of attending, and it is confidently expected that there will be a very successful meeting.

Those going from New York City and vicinity are invited to communicate with Caswell A. Mayo, 37 College place.



LILY BEDS NEAR KENT HOUSE.

The Kentucky Liquor Case.

A law, recently enacted in Kentucky, requires that druggists shall take out a State license of $50 for selling liquor on a physician's prescription, of $75 for selling without a prescription, and in Louisville an additional tax of $200 annually is imposed. To test the validity of the law, Dr. J. W. Fowler, of Louisville, president of the Kentucky Pharmaceutical Association, sold liquor to Judge R. H. Thompson, knowing that it would be used for medicinal purposes, but not upon a regular prescription. An agreed case was made up and Dr. Fowler was duly indicted. When the matter was tried ex-Gov. Proctor Knott appeared for the defendant and argued against the constitutionality of the law. The matter was then submitted. The punishment for the offense of selling liquor without a license is a heavy fine.

This is an indictment against the defendant under Paragraph 12, Subdivision 1, Article 10, of 'An Act Relating to Revenue and Taxation,' charging him with unlawfully and wrongfully selling and delivering to R. H. Thompson one bottle of whisky, an article on which a license is required, before procuring the license and paying the tax thereon, as required by law.

The case is submitted to the court upon an agreed state of facts. By said agreement it is shown:

First—That the defendant is and was at the time the whisky is alleged to have been sold by him a legally registered pharmacist, regularly engaged in business as a retail and prescription druggist, in good faith, in the city of Louisville and county of Jefferson.

Second—That spirituous liquors—including whisky—and the various kinds of wine are useful and necessary medicines in the treatment of a large variety of diseases, and are so recognized by all standard authorities.

Third—That the charge contained in the indictment is true.

Section 35, Subdivision 4 of Article 10 of the act aforesaid provides, that, before engaging in any occupation or selling any article named in this and Section 37 of this article, the person desiring to do so shall procure license and pay the tax thereon as follows:

To persons who are druggists in good faith, to retail spirituous and vinous liquors at the drug store in quantities not less than a quart, the liquor not to be drunk on the premises, or adjacent thereto, and to sell in quantities less than a quart for medicinal purposes, only on a prescription of a regular practicing physician, $50.

It is claimed that this provision is unconstitutional and invalid. The learned counsel for defendant contends that as the power to tax is the power to destroy, that a tax of any kind upon the druggist selling whisky, admits the power to prohibit the sale of whisky for medicinal purposes, and that any attempt to do this is not a proper exercise of the police power, but an arbitrary exercise of a power inhibited by the Bill of Rights.

'If this was an open question, I should certainly concur with this view; but the Supreme Court of the United States and our Court of Appeals have ruled differently, and by that ruling I am bound. Our